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ABSTRACT

A curriculum has been designed to teach the following 5 components of motivation to achieve in school: (1) affective, or enjoying school, (2) conceptual, or seeing oneself as a learner, (3) purposive, or goal setting, (4) instrumental, or actively moving toward goal attainment, and (5) evaluative, or self-assessing progress toward goals. Field testing has occurred over the past three years to evaluate the curriculum, refine teacher training procedures, and extend the curriculum to kindergarten as well as preschool. Outcomes were analyzed with "Gumpgookies," an instrument created to measure motivation for achievement, and criterion-referenced tests. Assessment also included classroom observation procedures. Also studied were the effects of two newly devised curricular units involving intensive individual contact with a small number of students. Analyses of results indicate that the curriculum had preliminary positive effects and that teacher training procedures were generally effective in producing teacher behavior needed in the curriculum. In addition, the program seems to be effective with kindergarteners. Appendices describe the important activities and measurement instruments of the curriculum. (DP)

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Final Report on

Continuation of Research on Teaching Preschool Children Motivation To Achieve in School--1971-72

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*Director of a subcontract with Fordham University for further exploratory study of two hypothesized components of motivation to achieve.

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FOREWORD

This report, on continuation of programmatic research on motivation to achieve in school, is concerned primarily with application of curricular units to teach motivation to preschool and kindergarten children. Previous work involved development and evaluation of units of material that were appropriate for preschool children and that could be communicated readily to teachers with a modest amount of training effort. The focus has been extended in the present project to include children in kindergarten, to provide additional new exploratory measures of certain outcomes of the curriculum, to encompass some intensive work with a small number of children based upon new exercises, and to increase efforts to guarantee that teachers implement the curriculum as it was designed.

The assistance of Phyllis Loveless throughout the project was invaluable in communicating to teachers the goals and procedures that were part of the curriculum available at the onset of this year's project and in supporting the teachers as they attempted to enact the activities that were described. June Kimura assisted in these responsibilities and in addition was responsible for constructing many materials that were used. Both helped to develop and administer instruments used in the evaluation.

Under a subcontract with Fordham University, Bonnie L. Ballif, Valerie Crane, and Bonifacia N. Balais worked with the Center on development of supplementary exercises for two of the five units of the curriculum and of measures that might assist in assessing attainment of objectives specific to these two units.

The teachers who participated in the project in Honolulu classrooms were Sharon Niwa, Delores Rowell, Carolyn Sugihara, and Kimi Takahashi.

The aides who were present in two of the classrooms throughout the year were Lydia Rodrigues and Violet Meneses. Gratitude is expressed to the Honolulu Community Action Program for approval of the use of one Head Start class and to the State Department of Education for approval of the use of one preschool class supported by Title I of the U.S.O.E. and two kindergarten classes. The project staff is particularly indebted to Ruby Hargraves, Elizabeth Yonehara, and Royce Higa of the Honolulu Community Action Program; and to Jane F. Takamine, Robert S. Mizuno, Jean Shida, Margaret Yamashiro, Alice Yee, Kenneth Furukawa, and Frank Neugebauer of the State DOE. Other teachers who participated in the project are Nancy Tanaka, Elona Hook, Georgianna Williams, Gertrude Zane, Edith Kashinoki, Carol Hochfelson, and Hannah Lou Bennett.

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Abstract

A curriculum that provides instruction on five theoretically derived components of motivation to achieve in school has been developed and field-tested over a three-year period by the University of Hawaii Center for Research in Early Childhood Education. The curriculum was presented during 1971-72 in two preschool and two kindergarten classes in Honolulu with the following objectives: (a) to evaluate the curriculum, (b) to refine teacher-training procedures, and (c) to extend the curriculum from prior exclusive use with preschool children to use with children of kindergarten age. Results were analyzed with criterion-referenced tests as well as with pre-tests and post-tests. Also, an investigation of effects of two newly devised curricular units involving intensive individual contact with a small number of subjects was conducted in New York City under a subcontract with Fordham University.

With respect to the first objective, post-test scores adjusted for initial differences in pre-test values were significantly greater for preschool and kindergarten treatment groups than for comparison groups on the total score of a test designed to assess motivation to achieve; however, inconsistent or nonsignificant results were obtained on comparisons with the recognizedly unreliable factor scores on the same test. Analyses of criterion-referenced tests tailored specifically to the content of each curriculum unit frequently yielded significant results in favor of the treatment group. For the second objective, teacher-training procedures were generally found to be effective in producing teacher behavior that coincided with instructions in the curriculum manual. Third, teachers and Center staff reported that

the curriculum seemed equally effective with kindergarten and preschool children, although the criterion-referenced tests slightly more often yielded significant differences between experimental and comparison groups with the preschoolers.

Presentation of sets of experiences devised with a view to enhancing development of two of the hypothesized components of motivation, with a one-to-one teacher-student ratio for three 15- to 30-minute periods per week over 12 weeks, was associated with dramatic gains from pre-test to post-test for three of four students. Although alternative explanations are possible, in view of the lack of optimally desirable experimental controls, these results suggest that intensive treatment with experiences of the type involved may alter test scores much more than does the curriculum previously tried in regular classrooms.

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CHAPTER I

INTRODUCTION

The development of motivation to achieve in school has long been recognized as a salient issue in attempts to educate children from low-income backgrounds. Such children have been variously identified as lacking motivational skills, as having motivation skills not related to schooling, or as possessing characteristics incompatible with expression of school motivation (Katz, 1968).

Whatever the source of motivational difficulties characteristic of low-income children, it is often assumed hopefully that the problem can be resolved by special procedures for arranging curriculum materials, for preparing the child to encounter the materials, or for arranging contingent rewards. Curriculum designers rely heavily upon arrangement of curricula to achieve their ends with materials that may consist of natural artifacts (Biber, Shapiro, & Wickens, 1971) or commercially available equipment (Taba, 1967). The child is prepared to encounter the materials by task analysts, who identify task components that a child must master and then move him in programmed fashion through the prescribed sequence (Glaser, 1964; Resnick, 1966). Such persons also may be inclined to offer extrinsic rewards for task completion (e.g., Englemann, 1969; Risely, 1972) in coordination with step-by-step advancement toward prescribed goals. Motivation to achieve seems to be assumed to be a distinct entity that consists principally of acting out the role of an achieving student. A motivated student, quite simply, is regarded as one who participates in activities of the classroom, whether designed by teacher or student, and performs to a satisfactory level of accomplishment on examinations.

The position taken here is that motivation to achieve in school is a complex construct that consists of a constellation of identifiable and teachable process skills. These skills, once acquired,can be transferred to any specific curriculum content and should be promoted in children quite early to be most effective. A child may initially learn these skills through interactions with people in his school environment, both children and adults, rather than through materials or rewards with which he is presented.

To the extent that the nature of interactions conducive to acquisition of motivation process skills can be described, they can be presented as recommended procedures and activities for teachers and aides to follow. Such procedures and activities comprise the curriculum to teach motivation to achieve that has been developed and used in this investigation.

The process skills identified, based on a theoretical conception of motivation to achieve in school, consist of the following components: (a) affective, or enjoying school; (b) conceptual, or conceiving of oneself as a learner; (c) purposive, or planning and goal-setting; (d) instrumental, or conducting instrumental steps toward goal attainment; and (e) evaluative, or assessing the effectiveness of one's instrumental steps. These components of motivation are conceived as responses that become covert following repeated enactment with school-related or achievement-oriented content. The appropriate response is communicated to the child by direct instruction and by modeling, whether by child or adult, and the response is reinforced socially in the immediate setting. The child's continued interactions with important individuals in his school environment are critical to the acquisition of motivation to achieve in school. Summaries of earlier literature bearing upon these hypothesized components of motivation to achieve in school are contained in a previous report (Adkins & Ballif, 1970).

A curriculum to teach motivation to achieve in school based upon these principles was developed by the Center for Research in Early Childhood Education at the University of Hawaii in 1968-69 in collaboration with staff of Fordham University under a subcontract (Adkins & Ballif, 1971). The curriculum was designed for preschool children and contains content units, progressively introduced throughout the school year, that are consistent with the five theoretically derived components of motivation. Results of the initial tryout of the curriculum were considered sufficiently promising to warrant its revision and elaboration in 1969-70 (Adkins & Espinosa, 1971). It was further developed in 1970-71 and presented to more children of preschool age (Adkins & O'Malley, 1971).

A new technique to assess motivation to achieve in school, Gumpgookies, had been developed earlier and was refined more or less concurrently with the motivation curriculum (Adkins & Ballif, 1972). The test consists of 75 two-choice items in which a cartoon figure referred to as a gumpgookie engages in an activity keyed as motivated to achieve in school while another gumpgookie participates in a non-motivated activity. The instrument has been administered to over 1,500 preschool children throughout the United States, and in its current 75-item form yields scores on five factors that seem reasonably consistent with the hypothesized components of motivation, as represented in units of the curriculum. The factor scores and the total score have been converted to age-normed Z scores (Adkins & Payne, 1971). Children who are uncertain of their choice for the two-alternative items resort to response sets, however, which may depend on the position of the answer on the page (left-right or up-down) or the order in which it is presented (primacy-recency). The response sets do not systematically affect total score but may distort scores on separate factors; hence, factor scores were computed by a new method that yields factors uncorrelated with response sets (Adkins & Ballif, 1972; Horst, 1972).

Initial tryout of the motivation curriculum with three Head Start classes in 1968-69 resulted in positive anecdotal reports from teachers but nonsignificant pre- to post-test differences between three treatment and three comparison classes on the total score of an earlier 100-item form (Adkins & Ballif, 1970). Nevertheless, the groups by trials interaction term approached significance, with the treatment classes having the higher post-test mean. This fact, coupled with positive teacher feedback, seemed sufficient indication of success to warrant extending the curriculum to a second year. The second tryout with two treatment and two comparison Head Start classes in 1969-70 resulted in no significant differences between groups on the 75-item form of the Gumpgookies in an analysis of covariance (Adkins & Espinosa, 1971). The dependent variables, which in addition to the total score included factor scores corrected for response sets, were all reported as age-normed $\underline{Z}$ scores. The covariates were the pre-tests for each dependent variable and the WPPSI pre-test total score. The third tryout of the motivation curriculum with three treatment classes and three comparison Head Start classes in 1970-71 indicated no significant differences in an analysis of covariance for the age-normed factor scores or total score (Adkins & O'Malley, 1971). Nevertheless, it should be kept in mind constantly that pre-test to post-test differences on age-normed *Z* scores did in general increase significantly for both experimental and comparison classes.

The principal ambiguity in past analyses of the motivation curriculum is that lack of significant differences attributable to the special curriculum alone might be based upon a number of determinants. Failure to find significant differences in gains from one class to another is conceivably the result of one or more of the following: the inappropriateness of the test itself; weaknesses in the curriculum; inability of teachers to implement the curriculum; inappropriateness of the curriculum for preschool children in Hawaii; or, *possibly most important*, the fact that teachers and/or curricula in comparison classes may have been equally as motivating as those in the special classes. Moreover, the teacher *n*'s were of necessity very small.

Although the test can claim a degree of construct validity based on factor analyses and on comparisons between extreme groups rated high and low on motivation by teachers (Adkins & Ballif, 1970; Adkins & O'Malley, 1971), it was thought that more specific evaluations of curriculum effects might be useful in supplementing analyses conducted with *Gumpgookies*. Furthermore, by attempting to identify the extent to which teachers were implementing the curriculum, it was expected that the range of alternative explanations for not finding significantly positive statistical results could be reduced. An additional factor could be eliminated if the curriculum were to be presented to kindergarten children, for then a relative standard for the age-appropriateness of the curriculum would be available.

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Even with these improvements in design and assessment, however, difficulties of interpretation may be anticipated. First, random assignment to treatment and comparison groups has never been within the realm of possibility for the Center's activities. As has been typical with Head Start programs, the local CAP has made decisions regarding assignments of children to classes. Second, and perhaps most importantly, treatment classes have generally been contrasted with classes in which some curriculum other than the motivation curriculum was presented. Such alternative curricula in some instances may enhance motivation of the students to achieve in school as well as, or better than, any special program that could be devised. This interpretation is supported by the generally consistent finding across the years of significant gains on Gumpgookies from pre-test to post-test on age-normed Z scores for both treatment and comparison classes. Third, the ideal test of the curriculum, which has never been possible, would be to use a very large number of classes to eliminate teacher effects.

With the foregoing limitations in mind, the present study was planned and implemented during 1971-72 to resolve issues concerned with supplementary and more specific assessment, teacher fidelity to curriculum procedures, developmental appropriateness for preschoolers, and potentialities for intensive work with individual children.

Objectives

The first objective was to evaluate the extent to which goals of the current motivation curriculum were being attained by exploring possibilities of new, and relatively untried, criterion-referenced instruments to supplement evaluation of the curriculum by the Gumpgookies.

A second objective was to increase the probability that the curriculum was implemented as intended by extensive in-service training, and to assess correspondence between practice and intent with specially devised new and admittedly imperfect evaluation instruments.

A third objective was to extend use of the curriculum to kindergarten children to determine whether or not expected curriculum outcomes were developmentally more appropriate for older children.

And a fourth objective was to gain suggestions for further work on motivation of preschool children to achieve in school by an intensive case-study approach, with concentrated individual efforts on a very small number of cases (four, to be exact), an approach subcontracted to Fordham University under the direction of Ballif.

CHAPTER II

INSTRUMENTS

The assessment techniques in this evaluation were selected primarily to determine whether or not children were attaining certain objectives of the motivation curriculum and of new exercises related to certain of its objectives. This is a question of effectiveness of the curriculum in fulfilling intended purposes. Other types of instruments were presented to assess ability level and teacher-rated motivation of the children and to determine by a new instrument whether or not the teachers were conducting the curriculum as they had been instructed in workshops and in twice-weekly meetings. The question that analyses of the latter instrument answered was whether or not the curriculum was being applied in the classroom as intended.

Curriculum Evaluation Instruments

1. Gumpgookies (GUMP)

The Gumpgookies test was developed at the University of Hawaii specifically to measure motivation to achieve in school (Adkins & Ballif, 1970, 1972). Each of 75 items consists of two figures, gumpgookies, responding in a situation in different ways that presumably reflect either a motivated or an unmotivated orientation toward achievement in school. The examiner reads a caption associated with each figure in a pair and asks the child to choose the gumpgookie that is most like him. Total score is the number of times the child chooses the gumpgookie whose behavior reflects achievement motivation. Five factor scores that correspond roughly to the five theoretically-derived units of the motivation curriculum are as follows: school enjoyment; self-confidence; purposive behavior or constructing future goals; instrumental behavior or knowing and taking instrumental steps; and self-evaluation or ability to evaluate one's own performance coupled with confidence that the evaluation will be positive. Age-normed Z scores for the total score and the factor scores, each with a mean of 100 and a standard deviation of 15, are derived from the regression of raw scores upon chronological age (Adkins & Payne, 1971). Although the total score on the test, which is not systematically affected by response sets, is of satisfactory reliability, the factor scores corrected for response sets are based primarily on only small numbers of items. Their reliabilities are low, so that their use for research purposes can only be suggestive.

2. Observation of Individual Motivation Behavior (OIMB) (Appendix A)

A procedure for assessing classroom behavior in naturally occurring situations (Appendix A) was used to identify the relative frequency of behavior pertinent to Unit II, Seeing Oneself as a Learner. Observers unobtrusively recorded whether or not relevant behaviors were performed in the classroom by a child in a one-minute interval and then observed a new child. Observers recorded information on the entire group in this fashion three times in immediate succession. Generally, behaviors of half the class were recorded by one observer while a second observer recorded behaviors of the other half. The behaviors were as follows: making choices, working independently, persisting in a task, taking pride in one's work, initiating conversation with the teacher, assuming responsibilities, and showing curiosity. The situation in which the behaviors were observed, free-play, was kept constant to permit comparisons from class to class. The score for each situation is the per cent of one-minute time intervals in which the behavior occurred relative to the total number in which it was observed.

Behaviors recorded were selected from ongoing activities in the curriculum (Adkins & Ballif, 1971, p. 24) as distinct examples of conceptual responses and as behaviors that might be observable in discrete time segments. However, only four of the seven behaviors--making choices, working independently, persisting in a task, and assuming responsibilities--occurred with enough frequency to record in one-minute intervals, and these three were all contingent on whether or not the child had chosen an activity. In this limited time segment, although each of these behaviors could be identified separately, most often they all occurred simultaneously.

The data may be most useful in indicating which individual children were actually involved in some kind of task-oriented activity during the observation periods, as opposed to those who wandered aimlessly or were otherwise engaged in unproductive activity. The per cents of intervals, across children, in which making choices of activities occurred will therefore be the only observation data reported.

3. Observation of Group Motivation Behavior (OGMB) (Appendix B)

Another procedure, Observation of Group Motivation Behavior, (Appendix B) also focused on behavior in naturally occurring situations and on behavior that was the intended outcome of Unit II. Here the children were observed in groups rather than as individuals. The group situation was always one in which the teacher had assembled the full class about her for a 10- to 15-minute discussion. The topics included a story, something the children had seen, an excursion, etc. In order to avoid differences due to choice of topic or materials, each teacher, in both treatment and control classes, used the same series of pictures as a basis for one of the discussion periods. The behaviors recorded were as follows: listens attentively, participates in group activity, expresses ideas in the group, performs in front of the group, makes choices affecting the group, and knows what is expected as a member of the class. As with the OIMB, observers unobtrusively recorded whether or not relevant behaviors were performed in the situation by a child. But rather than observing each child in turn for a predesignated interval, the observers attempted to record incidence of behaviors as each child expressed them in the group. Each child wore a letter of the alphabet on his back to facilitate observation of instances of recorded behavior during successive time segments.

The recorded behaviors were selected from the ongoing activities of Unit II as those that might be observable in group situations and that would be definite indicators of a child's concept of himself as a learner. The one behavior that became most clearly observable in individuals was "Expresses ideas in a group." The other behaviors either were being exhibited by the total group or were occurring so infrequently that their incidence was virtually negligible during the prescribed observation periods. For this instrument and other new ones covered in this report, the reader should keep in mind that there had been no earlier opportunities for extensive trial and revision in advance of their use in this study.

4. Persistence and Resistance to Distraction (PARD) (Appendix C)

The test of Persistence and Resistance to Distraction (Appendix C) is included in the Cincinnati Autonomy Test Battery (Banta, 1970). The child is requested to replace four selected pieces of a difficult puzzle that has a total of 12 pieces. Persistence is recorded by noting presence and absence of goal-directed behavior in 20-second intervals throughout a two-minute period. After this period, the examiner places eight blocks to the child's right and gives the child the option of either playing with the blocks or finishing the puzzle by putting the pieces flat. Resistance to distraction is recorded by noting presence and absence of goal-directed behavior at 20-second intervals throughout a one-minute period. The score on each characteristic is the weighted sum of instances in which goal-directed and non-goal-directed behaviors occur.

The relevance of this test to the motivation curriculum is indicated in Unit II, Seeing Oneself as a Learner, in the statement that "reinforcement for achieving should be given for both the process of achieving (trying harder, sticking to a task, etc.) and actual accomplishment of successful completion of each small task" (Adkins & Ballif, 1971, p. 25). The relevance of this test is also evident in Unit III, Purposive Responses, in the statements that the child will learn to "think of what he is going to do before he does it" and "to use what he has thought of to do in order to direct what he does" (Ibid, p. 46).

5. The Day Peter Planned Test (Appendix D)

A new test (Appendix D) was designed to assess children's retention and understanding of the story "The Day Peter Planned" in Unit III of the curriculum and also to determine whether or not they are able to transfer the concept of planning to their own future actions. Peter is a little boy who has difficulty in making up his mind what he wants to do. He is presented as "an abstract peer model who learns to think of something to do and then does it" (Adkins & Ballif, 1971, p. 51). After observing planning behavior among his peers at school, he goes home and thinks about what he will wear to school the next day, and he plans a definite activity that he will carry out. He is portrayed as experiencing real satisfaction in being able to think of these things all by himself and then doing them.

The story was read by the teachers to their classes, using flannel figures provided with the curriculum. The test was administered to each class the day following the reading of the story. Scores are provided for retention of the story content and for transfer to unique situations of the principles presented in the story regarding planning of anticipated activities.

6. The Carrot Seed Test (Appendix E)

Another test (Appendix E) was designed specifically to assess the section of the motivation curriculum in which the story Carrot Seed (Kraus, 1954) is read to the children. The story relates a series of incidents in which a little boy plants a carrot seed and quite purposefully follows all necessary steps to nurture its growth, refusing to flag in his attention to the plant in spite of discouragement of peers and adults. The story concludes with the little boy smiling as he carts an immense carrot off in a wheelbarrow, perhaps reflecting the satisfaction for adhering to his initial plans, following the necessary instrumental steps, and achieving success. The purpose of the story in the context of the curriculum section in which it appears--Unit IV, Instrumental Activity--is to provide a model of carrying out instrumental steps toward goal completion.

In the first part of the test, retention is evaluated by requesting the child to select from a pair of pictures the one that accurately characterized what happened in the story. There are nine such pairs, each of which is assigned one point for a correct response. In the second part, the child's ability to describe the application in the story for planning and instrumental steps is evaluated with three questions, totaling a maximum nine points. The third part shows whether the child can transfer these principles to his own experience and consists of a single question worth a maximum of nine points. The total score is the sum of points on the three parts.

7. Instrumental Satisfaction (INST) (Appendix F)

A test of Instrumental Satisfaction (Appendix F) was predicated on the Katz (1967) studies in socialization of motivation, in which attitudes of third- and fourth-grade children following performance of a reasonably neutral task were evaluated. Children were asked to paste together from shapes of varying colors a series of designated objects, e.g., a car and a boat, and then to evaluate their performance as good, neutral, or bad. Katz found that low-achieving boys tended to perceive their performance on what was ostensibly a neutral task as being bad more frequently than high-achieving boys. Katz suspected that this self-depreciation resulted from early socialization experiences in which the child was punished for efforts that were unsatisfactory to the parent, leading to an anticipation of depreciation that could be equated with anxiety following task performance. Reduction of the anxiety could be accomplished in the absence of a depreciating adult by self-directed condemnation. Sustained task performance, which Katz equated with educational motivation, would be seriously hindered or disrupted by this self-directed condemnation, resulting in avoidance behavior comprised of either aggression or withdrawal when the child was presented with an educational task.

The motivation curriculum contains elements of instruction designed to enhance the child's image of his own performance that might be evaluated usefully by a test similar to that used by Katz. For example, the purpose of Unit IV is to "help the child learn how to accomplish his objectives, i.e., to help him identify and engage in behavior that will be instrumental in obtaining for him his desired ends" (Adkins & Ballif, 1971, p. 62). The teacher is encouraged to "reinforce the child each time he suggests and/or performs a step that is instrumental to one of his objectives" (Ibid, p. 63). This purpose and related teacher action, if effectively implemented, should affect the extent to which a child engages in self-depreciation following test performance. A test similar to Katz's may be useful in detecting the magnitude of this tendency in children exposed to the motivation curriculum in relation to comparison groups.

The test is comprised of five items in which the child pastes colored shapes on separate pages to assemble a table, a boat, an airplane, a house, and a car. Following the construction of each object, he rates how he feels about his picture by marking one of three faces at the top right of the page, a happy face, a neutral face, and a sad face. This answering device was used despite skepticism of the investigators regarding its susceptibility to positional response sets that probably are complicated further by picture preferences. The test is scored by assigning a weight of one to each happy face marked and minus one to each sad face marked, summing the weights across objects, and adding a constant five points to avoid negative scores.

8. Design Evaluation (Appendix G)

A test called Design Evaluation (Appendix G) was developed to determine whether the child knows how to use both external and internal criteria in making evaluations of a task he is requested to perform. External criteria are present when a clearly defined standard for performance is available to the child, and internal criteria are used when the child is expected to evaluate his product based on its idiosyncratic appeal.

The external criteria part of the test is based on curriculum Activity #5 (Adkins & Ballif, 1971, p. 78). The puppet Luffins looks at his name printed by the teacher and prints his name twice, after which he looks closely at both of his attempts, compares them with the model, and then indicates which one is more the way he wants it to be. The children are then encouraged to talk about the evaluation process--why Luffins chooses the one he does. In the test, each child is given a model design and asked to make one like it, then make another, and then indicate which one looks more like the model and tell why.

The internal criteria part of the test is based on curriculum Activity #13, in which the child is asked to draw a shape. He then is asked if it is the way he wants it to be or if he wants to make another. He is encouraged to note strong and weak points of his drawing and, if he wishes, to make another one with these points in mind. In the test, the child is asked to make a letter (kindergarten) or draw a shape (preschool) and to think about whether or not it is like he wants it. If he likes it the way it is, he is asked to tell why. If he does not like it and wants to draw another one, he is asked to tell what he does not like about the first one before he proceeds. Scoring is based on his ability to verbalize strong and weak points of his drawing, and also on his ability to apply these observations to his second drawing. The total score is the sum of the scores on external and internal criteria.

9. Day Evaluation (Appendix H)

A measure called Day Evaluation (Appendix H) is directly concerned with Unit V, Evaluative Responses. The child is asked questions pertaining to his experiences for the purpose of assessing his ability to evaluate a range of experiences rather than a product he had made. He is specifically requested to think about school yesterday and tell something which happened that he felt good about and something that he did not feel good about. This test is in direct reference to Activity #11 (Adkins & Ballif, 1971, p. 87) of Unit V of the curriculum. In this activity, the teacher and the assembled class talked at the end of the day about what things went the way they wanted them to and what things did not.

Each response is given one, two, or three points depending on the child's ability to identify precisely either positive or negative experiences that occurred.

10. Test of Autonomous Achievement Motivation (TAAM) (Appendix I)

This test, Autonomous Achievement Motivation, (Appendix I) was designed to assess the tendency of a child to select tasks that are difficult within a challenging range as contrasted with tasks that are simple or difficult beyond interest or ability. In autonomous achievement, according to Veroff (1969), the child bases his perception of task difficulty on prior experiences with the task; whereas in social achievement motivation, the child's perception of task difficulty is acquired from information delivered by an "informed source." Children tested for autonomous achievement motivation are presented with a series of tasks that each contain items arranged in order of increasing difficulty. The child attempts the items in sequence until he fails twice consecutively and then selects one item that he would prefer to repeat.

The scoring of the test diverged from the procedure prescribed by Veroff owing to a differing interpretation of the original statement by Atkinson and Feather (1966), that the selection of calculated risks as compared to sure things or outside chances is characteristic of individuals high in approach achievement motivation. Whereas Veroff interpreted a "calculated risk" to be the last item on his test on which success was obtained, the present investigators interpreted this as the first failure item. More weight in scoring was thus given to a response in which the child elected to repeat the next to the last failure item.

The test of autonomous achievement motivation resembled the test used by Veroff (1969) and included: (a) a bead reproduction task, in which the child is asked to reproduce a string of beads from memory; (b) a basket-throwing task, in which the child is asked to throw a styrofoam ball into a waste-paper basket from behind lines set at different distances; (c) a memory task, in which the child is asked to recall the pictures on a sheet of paper; and (d) a puzzle task, in which the child is asked to complete a puzzle. The child is presented an easy item for each task, on which success is guaranteed, and then increasingly difficult items until he fails twice consecutively. For the puzzle task, however, each child successfully completes the first two puzzles, for which he is given ample time, and then is interrupted part way to completion of the third.

11. Pictorial Self-Concept Scale

A Pictorial Self-Concept Scale (Boles, Barnes, & Felkner, 1971), was designed to measure general self-concept of children of kindergarten and primary age. It consists of 50 cartoon-like picture cards. A split-half reliability estimate ($\underline{n}$ = 1813) was reported, as well as a correlation of .42 with the Piers-Harris (Piers & Harris, 1964) self-concept measure. This test was used by Ballif and Crane in intensive study of four cases.

12. Structured Observations

Measures based upon structured observations at specified intervals were obtained by Ballif and Crane in the course of their studies of four children. A diorama of a classroom (with shelves; games; a variety of equipment; paper stick figures of a teacher, two boys, and two girls; and a table) was used to elicit stories about school, learning, and achieving. These stories were recorded and scored for indications of school enjoyment or self-confidence in school achievement, depending upon the set of experiences involved. (See Appendix L)

13. Woofles

A test called Woofles, initially developed in 1970-71 at Fordham University by Ballif under subcontract with the Center for Research in Early Childhood Education at the University of Hawaii, was used as an experimental instrument in evaluation of the motivation curriculum applied at the University of Hawaii during 1970-71 (Adkins & O'Malley, 1971). This individually administered instrument was designed to evaluate Unit I, School Enjoyment, and is intended to determine the child's expectations of affect from achieving in school learning. The original 48-item test is given in Appendix G of the Center's report on 1970-71 activities

(Adkins & O'Malley, 1971). It was revised somewhat and shortened to 30 items for the 1971-72 study.

Woofles is a hand-puppet friend of the examiner who purportedly is spending his first day in school and would like to know how the child feels about school. The puppet asks the child a series of 30 questions with yes-no answers pertaining to school-related activities, 14 of which are positively stated to reflect positive motivation toward school and 16 to reflect non-motivation. Each question is paired with a photograph of three children illustrating the specific school activity. The three children appear to be representative of Caucasian, black, and Puerto Rican ethnic groups--groups appropriate in the New York City context in which the test was developed but not particularly germane to the Hawaii ethnic mix. The sex of the child for each ethnic group represented and the degree of participation in the school activity illustrated were determined by random assignment. Total score is the number of responses that indicate motivation to achieve in school. As is explained later, practical difficulties arose that made detailed interpretation of results of this test for the Hawaii sample unprofitable. However, Ballif and Crane used the test on their four New York subjects and their results are reported later.

14. Doll Play

Doll Play, also initially developed at Fordham University by Ballif under subcontract with the Center for Research in Early Childhood Education at the University of Hawaii, was used as an experimental instrument in the evaluation of the motivation curriculum during 1970-71 (Adkins & O'Malley, 1971). The instrument, individually administered, was designed to supplement evaluation of Unit I, School Enjoyment, as was

Woofles. In Doll Play, however, situations were extrapolated from items on the Gumpgookies School Enjoyment factor. The test is shown in Appendix H of the report of Center activities for 1970-71 (Adkins & O'Malley, 1971).

In Doll Play, a classroom in miniature, depicted on cardboard with dolls in a series of seven open-ended school situations, is presented to the child. Dolls--two boys, two girls, and one female teacher--are constructed of colored pipe-cleaners. Each situation depicts one boy and one girl paired to engage in a school-related activity, while the other two children engage in an activity not related to school. The teacher is involved directly in some situations, in others not. The examiner describes two contrasting activities to the child and then requests him to place his doll, of his own sex, in the center of the classroom and move it in the direction of the activity he prefers. The examiner asks three questions in each situation to clarify reasons for the doll's preference. Two different scoring procedures were used in Hawaii. The first, developed at Fordham, was applied before on a limited sample (77 kindergarten children) during 1970-71 (Adkins & O'Malley, 1971). In this procedure, the first question in each of the seven situations is scored +5 or -5, depending on whether it is a positive or negative indication of motivation to succeed in school. The other three probe questions are scored independently according to a scoring key that assigns to sample responses weights of +5 to -5.

The second procedure, developed by Loveless of CRECE, also scores the first question of the seven situations from +5 or -5, but instead of scoring the three probe questions independently, also scores any responses directly related to the first response from +5 to -5. Any one of the three responses directly related is scored according to the scoring key. This is done in an attempt to place heavier emphasis on verification of the first response. A constant, 140, is added to all scores in both procedures to eliminate negative totals. Total score is the sum of individually weighted responses to the doll placements and the three questions across the seven situations.

Again, however, as with Woofles, Doll Play for the Hawaii samples presented problems such that the results are questionable and will not be reported in detail.

Other Evaluation Approaches

1. Stanford-Binet Intelligence Scale, Form L-M

The Binet (Terman & Merrill, 1960) was administered to assess the general intelligence of the children in the treatment classes. It has been widely used to assess ability level, provides a single deviation IQ, and is appropriate for children in the age range in question.

2. Metropolitan Reading Readiness Test

The Metropolitan (Hildreth, Griffiths, & McGauvran, 1966) was administered by the kindergarten classroom teachers as part of a general series of assessment instruments prescribed by the State Department of Education. The test contains sections on word meaning, listening, matching, alphabet, numbers, and copying. The test scores were used to make comparisons among the children in these groups with respect to readiness to perform work in first grade.

3. Adkins-Ballif Motivation Rating Scale (Appendix J)

All teachers were asked near the end of the year to rate each child in their classes on a scale designed to assess motivation to achieve in school. The scale was developed by Adkins and Ballif (Appendix J) independently of this project to evaluate child behavior that was consistent with the motivation curriculum (Adkins & Ballif, 1971). The scale consists of 15 items in the form of statements such as, "Is enthusiastic about school," "Lacks confidence in own ability," and "Asks reasons for things." Each item was intended to reflect one of the five curriculum areas (affective, conceptual, purposive, instrumental, and evaluative).

For each child in the class, the teacher assigned to each item one of four categories, ranging from "Very much like" to "Not at all like." These ratings were then translated into scores from 1 to 4, with 1 representing the teacher's rating of least motivated behavior and 4 representing the most motivated behavior. The score is the sum of the item responses.

4. Teacher Rating Scale (Appendix K)

A Teacher Rating Scale (Appendix K) was used by the two Center staff members who had the opportunity for regular observation of teacher performance to rate each teacher's adherence to the curriculum procedures. The items on the rating scale were selected from each unit's ongoing activities and are seen as discrete behavioral objectives for each teacher.

The two CRECE staff members rated each teacher on each item of the five units by assigning ranks ranging from 1 to 4. One represented the lowest performance on the item and 4 the highest. Scores for each unit and total scores were obtained by summing the item responses.

5. Attendance by units

Attendance figures were collected by units from the four experimental classes and one kindergarten control class. Special attention was given to comparative numbers of absences for Unit I, which emphasizes feeling good about school.

CHAPTER III

METHOD

Subjects

Subjects in the principal study reported here consisted of preschool and kindergarten children living and attending classes in Honolulu. There were two preschool and two kindergarten treatment classes, plus two kindergarten comparison classes and four preschool comparison classes. The children were predominantly from part-Hawaiian backgrounds, although most classes contained a mix of different ethnic groups--including Caucasian, Japanese, Korean, and Samoan. The children all resided in low-income neighborhoods, although in only the preschool classes, all of which contained Head Start children, was there guarantee that parents were below OEO income criteria. One preschool treatment class (PT1) was a Honolulu District Title I class for "educationally disadvantaged" children, although the children were selected with the same criteria as apply to Head Start children by the Honolulu CAP. Both kindergarten comparison classes were selected from the same school as the other two kindergarten classes.

Four subjects engaged in intensive study of particular aspects of motivation intervention in New York City will be described individually. All attended an inner-city parochial preschool class taught by Montessori methods by a female Caucasian teacher and a female Puerto Rican aide. $\underline{S}_1$, male, 51 months old at the beginning of the study, was of Filipino parentage. His father was an engineer, his mother a nurse. Home languages were Filipino and English. $\underline{S}_2$, male, was 51 months old at the beginning of the study and of Caucasian origin. His father was a stage electrician, his mother a housewife. English was spoken in the home. $\underline{S}_3$ was male, 58 months old at the beginning of the study, and of Puerto Rican parentage. His father was a social-health assistant, his mother a housewife. Home languages were Spanish and English. $\underline{S}_4$, female, was 67 months old at the beginning of the study and Caucasian. Her father was a computer analyst, her mother a housewife. English was spoken in the home.

Procedures

The Preschool Motivation Curriculum (Adkins & Ballif, 1971) was presented in two preschool and two kindergarten classes in Honolulu during 1971-72. Each class was located in a low-income neighborhood. The two kindergarten classes contained 25 to 30 children, and the preschool classes each contained 20 children. At least one adult in addition to the teacher was generally present in the classrooms. The two preschool classes were staffed with an aide, whereas the two kindergarten teachers depended for assistance upon parents or volunteers.

The teacher and aide training in Hawaii was conducted with a series of afternoon workshops, one for providing an initial overview and one for each curriculum unit introduced throughout the school year. Two Center staff members, one an experienced teacher, visited each classroom twice weekly to offer in-service training, to support the teacher as she attempted to implement the curriculum, and to supply Center-developed materials described in the curriculum guide. The ongoing activities and accompanying illustrative examples were abstracted from the curriculum and displayed in charts for inspection by the teachers, who were encouraged to use these charts as checklists for adherence to the curriculum procedures. As omissions were noted, teachers were encouraged to include these ongoing activities as a regular part of daily interactions with the children. The checklists were developed when the teachers expressed need for specific examples of how the ongoing activities could be translated into classroom action. This was true for Unit II (Seeing Oneself as a Learner), Unit III (Purposiveness), and Unit IV (Instrumental Activities).

Pre-tests and post-tests to evaluate the curriculum in the Hawaii classes were conducted with the Gumpgookies, as was the case in prior studies (Adkins & Ballif, 1970; Adkins & Espinosa, 1971; Adkins & O'Malley, 1971). Additionally, a number of criterion-referenced instruments to evaluate specific curriculum components were either selected from the literature or developed in experimental forms specifically for this investigation. These tests, which supplemented the curriculum evaluation with the Gumpgookies, are described in Chapter II with the other instruments. The Stanford-Binet was administered to all treatment group children as a general assessment of intellectual ability, and the Metropolitan Reading Readiness Test was administered to the kindergarten children for much the same reason. A list of Hawaii classes, tests administered, and numbers of subjects involved is presented in Table 1 for the preschool classes and in Table 2 for the Hawaii kindergarten classes. The numbers in the classes vary owing to occasional absences. As is evident from Table 1, the tests administered to the preschool control classes varied to avoid over-testing of the younger children. At the end of the school year, teachers rated the children in the treatment groups with a rating scale of motivation to achieve, the Adkins-Ballif Motivation Rating Scale, and two Center staff rated teachers on the extent to which they faithfully implemented the curriculum.

Table 1

Data Collected and Numbers of Subjects in Each Hawaii Preschool Class by Sex

	Treatment				Comparison					
	PT1		PT2		PC1		PC2		PC3	
Test	M	F	M	F	M	F	M	F	M	F
Gumpgookies	8	7	7	6	-	-	-	-	-	-
Woofles	10	7	8	7	8	7	-	-	-	-
Doll Play	-	-	4	9	-	-	-	-	-	-
PARD	9	9	10	9	-	-	9	10	-	-
The Day Peter Planned	10	8	6	6	-	-	7	8	-	-
Carrot Seed	10	9	9	7	-	-	8	9	9	9
Self-Evaluation	-	-	-	-	-	-	-	-	-	-
Design Evaluation	9	8	10	6	-	-	11	8	-	-
OIMB	9	7	10	7	-	-	9	10	-	-
OGMB	9	8	10	7	-	-	5	6	-	-
NEST*	-	-	-	-	-	-	-	-	-	-
Day Evaluation	-	-	-	-	-	-	-	-	-	-
TAAM	9	9	10	9	-	-	9	10	-	-
Stanford-Binet	11	9	11	8	-	-	-	-	-	-
Metropolitan	-	-	-	-	-	-	-	-	-	-
Motivation Rating Scale	10	9	11	9	-	-	-	-	-	-
Attendance	11	9	10	8	-	-	-	-	-	-

*Administered only to kindergarten children.

Table 2

Data Collected and Numbers of Subjects in Each Hawaii Kindergarten Class by Sex

	Treatment				Control	
	KT1		KT2		KC1	
Test	M	F	M	F	M	F
Gumpgookies	12	11	8	10	-	-
Woofles	6	7	10	10	15	11
Doll Play	8	13	8	9	6	5
PARD	13	12	12	12	14	12
The Day Peter Planned	10	9	10	10	13	9
Carrot Seed	13	12	6	12	13	10
Self-Evaluation	8	7	7	8	7	8
Design Evaluation	14	11	10	12	14	10
OIMB	14	11	9	11	14	11
OGMB	14	11	9	11	14	11
NEST*	13	11	8	11	14	10
Day Evaluation	14	10	8	10	14	10
TAAM	13	12	11	12	14	12
Stanford-Binet	16	13	12	11	-	-
Metropolitan	14	12	12	12	15	12
Motivation Rating Scale	14	12	12	12	-	-
Attendance	15	13	14	13	15	11

*Not discussed in the text due to low inter-scorer reliability.

The schedule for the curriculum units presented in Hawaii is shown in Table 3. Beginning and ending dates, as well as number of school days for each unit, are included.

The criterion-referenced tests, which in some cases may appear to relate to only one specific aspect of the curriculum, were also intentionally designed for a more general purpose, viz., to evaluate the overall impact of a curriculum unit. Insofar as principal interest in devising these instruments was to test more general behaviors than simple retention or comprehension of stories or illustrations, they appropriately contain items designed to assess such behaviors as application or transfer. That the influence of one specific story or illustration would be shown in such general dimensions of performance is highly unlikely. Significant results on a criterion-referenced test should be interpreted as the result of either a specific curriculum lesson or an entire unit, depending upon the variable specified. Note, also, that there could be no reasonable expectation that all or even most of the new and relatively brief experimental tests would be acceptably reliable and valid for their purposes, since no earlier opportunity for extensive work with them had been available.

A generally conservative approach was taken in the analyses of the Hawaii data obtained from the criterion-referenced tests, except where distributions appeared reasonably normal or where suitable nonparametric approaches were available. This avenue was deemed appropriate even considering Winer's (1971) suggestion that $\underline{F}$ is robust with respect to normality of distributions within treatment populations, since in some cases data were extremely skewed or bimodal.

Table 3

Schedule of Progress by Unit

Unit	Description	Start	End	School Days
I	School Enjoyment	10/1	11/22	35
II	Seeing Oneself as a Learner	11/23	1/13	26
III	Purposive Behavior	1/14	2/22	27
IV	Instrumental Behavior	2/23	4/6	27
V	Evaluative Behavior	4/7	5/26	36
Total Days				151

The primary purpose of studies conducted by Ballif and Crane in New York was not to evaluate particular experiences in a school setting but rather to get hunches as to effectiveness of experiences designed on the basis of principles of learning in producing predicted changes in school enjoyment and self-confidence in school-learning situations. The approach used was intensive analysis of effects of such experiences on just four children.

Of two adult Caucasian female experimenters, one modeled, elicited, and reinforced the desired responses in each of the experimental experiences, and the other administered measurement instruments and recorded observations. The experimental intervention consisted of two sets of 16 experiences, designed to increase, respectively, school enjoyment and self-confidence in school learning. (See Appendix L)

Prior to participation in the first set of treatment experiences, designed to affect school enjoyment, all _S_s were individually tested on _Woofles_ and _Gumpgookies_. In addition, they were rated by their teacher on the Adkins-Ballif _Motivation Rating Scale_, despite misgivings as to the use of teacher ratings for pre-test and post-test comparisons. Baseline responses were recorded for scoring during the first _Structured Observation_ related to affect. Before participation in the second set of treatment experiences, aimed at self-confidence, each _S_ was tested individually on the _Pictorial Self-Concept Scale_. Again, baseline responses were recorded for scoring during the first _Structured Observation_ related to self-confidence.

Each _S_ individually participated in one experience per 15- to 30-minute session on each of three different occasions during a week for six weeks for each set of experiences in succession. During the first sessions of the third and the fifth weeks for each set of experiences, Structured Observations were conducted. The pre- and post-test recorded responses in these observations were analyzed separately for each set of experiences.

After the first set of treatment experiences had been completed, the Ss were again individually tested on Woofles and responses were recorded for scoring during a fourth Structured Observation. After the second set of experiences, each S was again given the Pictorial Self-Concept Scale and responses were recorded for scoring during a fourth Structured Observation. Then each S again was tested on Gumpgookies and was rated by his teacher on the Motivation Rating Scale. At this same time, the teacher was interviewed for impressions of the effectiveness of the experiences in modifying the classroom behavior of the four Ss.

CHAPTER IV

RESULTS

Results of the analysis of the first objective, to evaluate the general motivation curriculum, are organized under four headings: Hawaii Subject Characteristics, General Curriculum Effects in Hawaii, Specific Curriculum Effects in Hawaii, and Intensive Analysis of Two Curricular Areas with a Small Number of Children in New York City. The first heading is concerned with indications of the general ability level of the children (Hawaii Subject Characteristics); the second presents analyses conducted on the Gumpgookies and the attendance records (General Curriculum Effects in Hawaii); the third deals with analyses conducted on criterion-referenced tests (Specific Curriculum Effects in Hawaii); and the fourth presents details on four children in New York City who received intensive special training on two units of the curriculum. Results of the analysis of the second objective, to determine whether or not the curriculum was implemented according to its design, are reported immediately following detailed analyses of the first objective. Conclusions regarding the third objective, to determine whether or not the curriculum is appropriate for kindergarten as well as preschool children, are then reported.

Evaluation of the General Motivation Curriculum

Hawaii Subject Characteristics

The children who participated in the Hawaii study were from low-income backgrounds and as such might be expected to perform below average on ordinary tests of intelligence or achievement. Table 4 gives means and standard deviations of Stanford-Binet IQs of children in treatment groups at each educational level, both preschool and kindergarten.

Table 4

Means and Standard Deviations for the Hawaii Classes on the Stanford-Binet and the Metropolitan Reading Readiness Test

Variable	Group	n	Mean	SD	Range
Stanford-Binet IQ	PT1	20	92.30	11.06	69-113
	PT2	18	78.00	11.73	58-100
	KT1	28	89.61	14.53	59-118
	KT2	23	91.48	11.22	70-118
Metropolitan	KT1	26	53.73	8.43	39-69
	KT2	27	47.08	17.20	17-78
	KC2	27	52.70	25.16	13-97

In the two preschool classes, a substantial difference between mean IQs was evident. For scores of the two preschool treatment groups, Table 5 presents a simple analysis of variance, which shows a significant difference between the groups at beyond the .001 level. The lowest-scoring children, PT2, attended a Head Start class in a housing project; their parents in many cases were recent immigrants and spoke broken English in the home. Children from the other preschool group, PT1, also lived in a low-income neighborhood but were from families of longer residence in Hawaii.

The kindergarten classes were comparable in mean IQ, as shown in Tables 4 and 5. Children had been assigned to these two classes and to the comparison class, also located in the same school, by selection of every third name from a complete alphabetic roster of kindergarten children.

The Metropolitan Reading Readiness Test was administered and scored in the kindergarten classes by the teachers as a regular part of an end-of-term battery. Raw-score means and standard deviations appear in Table 4. Means of the KT1, KT2, and KC2 groups are all within what the test manual (Hildreth et al., 1966) refers to as the range of "average" readiness status, i.e., as likely to succeed in first-grade work. The mean of KT2, however, is toward the lower limit of this range, whereas the means for the other two groups are approximately at the middle of the range. Cochran's test (Winer, 1970) for homogeneity of variance yielded a $\underline{C}$ value of .63, significant at the .01 level, with 3 and 27 degrees of freedom.

Marked differences are evident between results of the Binet and the Metropolitan for the kindergarten children. Whereas the two

Table 5

Simple Analyses of Variance for the Hawaii Classes on the Stanford-Binet and Metropolitan Reading Readiness Test

Variable	Groups	Source	df	MS	F	p
Stanford-Binet IQ	PT1, PT2	Between	1	1937.25	14.97	<.001
		Within	36	129.45		
	KT1, KT2	Between	1	44.38	.26	N.S.
		Within	49	172.83		
Metropolitan	KT1, KT2, KC2	Between	2	316.75	.94	N.S.
		Within	74	338.41		

kindergarten treatment groups seem comparable on the Binet, their variances appear quite different on the Metropolitan. The differences may be due to variations in administration or scoring procedures among the three teachers or to real differences between the test results.

The substantial difference in either mean IQ or variance of reading readiness between the treatment classes at each educational level suggests that evaluation of the curriculum effects should be conducted independently for each class rather than for a combined treatment group. This convention will be followed in all analyses presented.

General Curriculum Effects in Hawaii

Analysis of general curriculum effects is concerned with measures that yield a comprehensive understanding of effect of each curriculum unit or of the overall curriculum. The Gumpgookies provides such information, as would records of attendance by unit. Greater Gumpgookies mean scores and more frequent attendance are predicted for groups presented with the motivation curriculum.

Gumpgookies. The Gumpgookies factor scores reflect aspects of motivation to achieve that are roughly comparable to the five curriculum units, viz., school enjoyment, self-confidence, purposive behavior, instrumental responses, and self-evaluation. The total score reflects a composite image of motivation to achieve. Although both K-R 20 and retest reliability estimates for the total score are reasonably acceptable, K-R 20 estimates for the separate factor scores corrected for response sets, each based mainly upon a small number of items, are low. Hence conclusions based upon the separate factor scores are highly tenuous.

The comparison group used in the analysis of preschool Gumpgookies results (PC70) was selected from children who in 1970-71 (Adkins & O'Malley, 1971) had taken the Gumpgookies but had not had the motivation curriculum. These children, all from low-income backgrounds, attended Head Start classes in various locations throughout Honolulu. To these children had been presented a variety of different curricula that were products of the Center for Research in Early Childhood Education, including music and physical activities. No prior comparison groups of Kindergarten age were available for the Gumpgookies analysis; and limitations on available resources, due to restrictions in staffing, prevented administering the test to KC1 or KC2.

Means and standard deviations of the Gumpgookies age-normed Z scores for the preschool children are presented in Table 6, with separate values for pre-test and post-test on each factor and on the total score. Adjusted means for analyses of covariance are also shown in this table, with the pre-test as the covariate for the post-test score. The covariance analyses of each post-test factor and of the total score are given in Table 7. Significant differences were found for Factor 5 at the .05 level and for the total score at the .001 level, and differences that approached significance were found for Factor 1.

A highly significant difference on total score when only one factor score showed such a difference needs explanation. The Gumpgookies total test score is free of response sets--recency-primacy, up-down, and right-left--because the correct response for each item

Table 6

Means, Adjusted Means, and Standard Deviations of *Gumpgookies* Age-Normed *Z* Scores for Hawaii Groups PT1 (*n*=15), PT2 (*n*=13), and PC70 (*n*=48)

Gumpgookies Variable	Group	Pre-test Mean	Pre-test SD	Post-test Mean	Post-test SD	Adjusted Post-test Mean
Factor 1	PT1	96.33	13.89	105.67	13.35	105.76
	PT2	100.54	15.94	107.46	7.83	107.29
	PC70	97.60	17.46	97.48	18.51	97.50
Factor 2	PT1	100.80	13.14	97.33	14.26	97.93
	PT2	101.38	11.97	101.38	11.38	101.38
	PC70	96.33	12.33	94.67	14.12	94.67
Factor 3	PT1	95.53	13.59	101.87	17.48	101.81
	PT2	95.31	12.85	95.31	15.88	95.27
	PC70	94.27	13.85	96.04	14.47	96.07
Factor 4	PT1	97.20	15.21	103.93	11.26	103.99
	PT2	88.62	13.37	99.54	12.06	99.90
	PC70	102.10	15.85	101.65	12.38	101.53
Factor 5	PT1	89.27	17.64	108.60	11.11	108.73
	PT2	89.31	9.91	97.92	14.27	98.05
	PC70	91.42	14.57	101.06	11.81	100.99
Total	PT1	90.47	10.66	107.13	14.03	107.06
	PT2	85.54	10.30	101.23	14.98	102.83
	PC70	91.46	13.64	93.52	13.51	93.11

Table 7

Analyses of Covariance on Gumpgookies Age-Normed Z Scores for Hawaii Groups PT1 (n=15), PT2 (n=13), and PC70 (n=48)

Variable	Source	df	F	p
Factor 1	Groups	2	2.69	<.08
	Error	72		
Factor 2	Groups	2	1.27	N.S.
	Error	72		
Factor 3	Groups	2	.90	N.S.
	Error	72		
Factor 4	Groups	2	.41	N.S.
	Error	72		
Factor 5	Groups	2	3.17	<.05
	Error	72		
Total Score	Groups	2	7.48	<.001
	Error	72		

occurs an equal number of times with each set. As such, total score need not be corrected for response sets but can be converted directly to an age-normed Z score. The factor scores, however, essentially are based on much smaller numbers of items that were dependent upon factor analysis of item responses, with response sets partialled out. To correct for these, a method was developed by Horst (Adkins & Ballif, 1972; Horst, 1972) to produce orthogonal factor scores uncorrelated with response sets. The total score, not being a simple sum or average of the factor scores, reflects only a rough composite impression of their magnitude.

Means and standard deviations on the Gumpgookies for kindergarten children are presented in Table 8. Table 9 shows results of the two-(groups) by-two (trials) analyses of variance on each factor score and the total score. Principal interest was in shift of scores from pre-test to post-test, since no comparison group was available by which to detect differences among adjusted post-test means. The expected significant increase of scores from pre-test to post-test is evident in the total score, as well as in Factors 4 and 5. Inspection of means in Table 8 reveals that the significant effect for trials on Factors 4 and 5 and on total score was principally due to increases in mean scores for group KT1, which had low pre-test scores. It should not be surprising to find that children with low initial scores are affected most by the curriculum. That this is more than a regression effect is suggested by the comparable pre-test and post-test scores for the treatment group in the 1970-71 final report (Adkins & O'Malley, 1971), which were not significantly different. As with preschool scores, the degree of significance of difference between

Table 8

Means and Standard Deviations on Gumpgookies Age-Normed Z Scores for Hawaii Groups KT1 (n=23) and KT2 (n=18)

Gumpgookies Variable	Group	Pre-test		Post-test	
		Mean	SD	Mean	SD
Factor 1	KT1	102.83	12.20	101.61	9.23
	KT2	103.11	10.59	101.33	7.52
Factor 2	KT1	98.39	13.98	104.65	10.71
	KT2	107.11	15.09	106.72	14.30
Factor 3	KT1	94.17	12.50	96.39	9.32
	KT2	94.89	12.55	100.28	10.67
Factor 4	KT1	92.13	14.78	103.70	10.07
	KT2	103.06	10.02	103.67	8.51
Factor 5	KT1	93.35	13.57	102.65	11.24
	KT2	100.83	17.71	102.33	7.02
Total	KT1	91.61	14.44	101.22	11.87
	KT2	102.50	15.53	104.39	13.03

Table 9

Hawaii Groups (KT1 vs. KT2) by Trials (Pre-test vs. Post-test)
Analyses of Variance on *Gumpgookies* Age-Normed Z Scores

Gumpgookies Variable	Source	df	Mean Square	F	p
Factor 1	Between	40			
	Groups (G)	1	.00	.00	N.S.
	Error	39	113.93		
	Within	41			
	Trials (T)	1	.43	.52	N.S.
	G x T	1	.02	.89	N.S.
	Error	39	101.68		
Factor 2	Between	40			
	Groups (G)	1	587.69	2.99	<.10
	Error	39	196.43		
	Within	41			
	Trials (T)	1	228.88	1.37	N.S.
	G x T	1	223.31	1.34	N.S.
	Error	39	166.96		
Factor 3	Between	40			
	Groups (G)	1	106.88	.71	N.S.
	Error	39	151.31		
	Within	41			
	Trials (T)	1	266.94	2.57	N.S.
	G x T	1	50.94	.49	N.S.
	Error	39			
Factor 4	Between	40			
	Groups (G)	1	599.44	4.90	<.05
	Error	39	122.37		
	Within	41			
	Trials (T)	1	955.44	7.02	<.02
	G x T	1	606.06	4.55	<.04
	Error	39			
Factor 5	Between	40			
	Groups (G)	1	259.44	1.52	N.S.
	Error	39	170.24		
	Within	41			
	Trials (T)	1	708.06	4.34	<.05
	G x T	1	307.69	1.89	N.S.
	Error	39	163.07		
Total	Between	40			
	Groups (G)	1	998.25	3.34	<.08
	Error	39	298.94		
	Within	41			
	Trials (T)	1	793.00	10.27	<.01
	G x T	1	301.06	3.90	<.06
	Error	39	77.22		

means on the total score was of greater magnitude than that on the factor scores. This can be explained as before with reference to the distinctive characteristics of the factor scores and their much lower reliability.

Analyses with the *Gumpgookies* as an evaluation instrument in reports from prior years (Adkins & Ballif, 1970a; Adkins & Espinosa, 1971; Adkins & O'Malley, 1971) have yielded equivocal results, with different factors revealing significant differences between motivation and comparison classes in different years and the total score rarely showing significant differences between pre-test to post-test gains for motivation and comparison classes although *uniformly* showing significant pre- to post-test differences for *both* types of classes. The analysis presented here may be more valid than the earlier ones because of greater attention to teacher training than in previous years. With more certainty that the curriculum was being implemented in accord with the original design, the magnitude of discrepancies between treatment and comparison groups deserves more credence. In general, the curriculum appeared to produce differences between motivation and comparison groups on the total score but somewhat inconsistent differences on the factor scores, although on these, too, post-test performance usually exceeded pre-test performance for both groups. A new modification of individual factor scores is under consideration, in which response sets are further corrected for individual cases. This approach may yield more consistent differences between treatment and comparison groups on corrected factor scores, which still, however, will be of low reliability because of the small number of items that contribute substantially to them.

Attendance. The expectation that attendance records maintained by curriculum unit would reflect differences between treatment and comparison groups was based on the intended curriculum outcome of greater school motivation. Although a child's attendance may be influenced by numerous conditions apart from those which prevail in the school, e.g., parental attitudes, the curriculum may nevertheless affect the child's willingness to submit to opportunities for chronic truancy. The availability of children assigned to classes in quasi-random form, as in the kindergarten, might make inspection of attendance particularly revealing.

Frequency of attendance by unit for the preschool and kindergarten treatment groups, plus the kindergarten comparison group, was recorded for each child and converted to a percentage of total number of days on which attendance was possible. The medians and first and third quartiles of the distributions of per cent attendance by unit are presented in Table 10. Particularly in Unit I, School Enjoyment, differences might be predicted between the kindergarten treatment and comparison groups. At the beginning of the year, children may balk at their initial encounter with school and resort to vague complaints regarding imagined vexations. Inspection of Table 10 reveals that the median per cent attendance during Unit I was comparable among the three kindergarten groups and that the lower and upper quartiles of these distributions did not appear markedly different. The total percentages of attendance for the three kindergarten classes are also strikingly similar, as indicated by medians and quartiles. No stable patterns suggest that systematic differences occurred among the groups; nevertheless, the data are interesting as records of levels of

Table 10

Medians and Quartiles of Per Cent Attendance by Unit and Group in Hawaii

			Per Cent Attendance					
Group	n*	Quartile	I	II	III	IV	V	Total
PT1	20	Q_3	98.50	92.17	95.75	98.00	95.50	95.17
		M	92.50	87.75	81.17	91.00	90.50	86.00
		Q_1	87.50	76.50	79.50	83.00	73.50	81.50
PT2	21	Q_3	99.90	95.75	96.13	99.79	96.83	95.25
		M	97.25	85.25	89.00	96.00	89.17	92.63
		Q_1	93.75	76.69	67.38	91.00	82.00	85.75
KT1	29	Q_3	96.83	99.83	93.25	96.04	94.00	93.25
		M	91.00	96.00	85.17	92.83	91.70	89.25
		Q_1	83.50	85.50	78.00	85.25	75.00	83.63
KT2	29	Q_3	99.54	99.57	96.33	96.40	86.50	91.88
		M	96.61	92.50	85.17	92.83	82.75	89.67
		Q_1	86.08	84.67	77.75	80.67	75.50	83.13
KC2	27	Q_3	99.78	99.85	99.85	96.42	96.92	95.63
		M	96.70	88.17	96.00	93.13	88.75	89.33
		Q_1	85.67	84.67	89.13	85.08	77.88	82.25

*This figure represents the number of subjects in the "Total" column, although the figures for other columns varied only slightly depending on whether children entered or left the class.

attendance in a typical kindergarten class in which the motivation curriculum has been presented and as an indication that this particular motivation program did not appear to affect differentially children's attendance relative to a comparison group. Data for the preschool classes show analogous figures for children one year younger, which do not differ consistently from those for kindergarten classes.

Specific Curriculum Effects in Hawaii

Analyses conducted on specific curriculum effects will be reported for each test used. The order of the tests results discussed follows the sequence of units of the curriculum assessed with criterion-referenced instruments. The tests planned for the curriculum units were as follows:

Unit I:	Woofles and Doll Play;
Unit II:	Observation of Individual Motivation Behavior (OIMB), Observation of Group Motivation Behavior (OGMB), and Persistence and Resistance to Distraction (PARD);
Unit III:	The Day Peter Planned;
Unit IV:	The Carrot Seed and Instrumental Satisfaction;
Unit V:	Design Evaluation, Day Evaluation, and Test of Autonomous Achievement Motivation (TAAM).

Unit I: School Enjoyment.--Woofles and Doll Play

Two tests originated by Ballif and Crane, Woofles and Doll Play, were designed to assess the child's expectations of affect from achieving in school learning (Adkins & O'Malley, 1972). In a revised form of Woofles, the child was requested to respond to 30 yes-no questions pertaining to activities depicted in photographs that either do or do not reflect motivation toward school. The second test, Doll Play, was designed to identify aspects of the child's expectations of affect from attending school. Its contents are more specifically representative of items from the Gumpgookies on the School Enjoyment factor. The child is to indicate in a series of seven situations in which of two activities his (pipe cleaner) doll would prefer to participate, one that does or does not reflect motivation to achieve in school. The child is also asked three probe questions in each situation to clarify reasons for the doll's preference.

Originally it had been planned to use both of the tests to assess in 1971-72 specific effects of Unit I, related to School Enjoyment. Extensive efforts were made and the tests were administered, but it had been impossible to use them as pre-tests and their administration after completion of the curricular unit of necessity was spread over a long period because of commitments for other tests and other activities. Late availability of only one set of test materials for Woofles; uncertainties as to scoring procedures for Doll Play; delays in communication, especially regarding the latter test; failure of renewed efforts to modify the scoring of Doll Play--all of these factors resulted in equivocal conclusions, the details of which will not be presented.

Further intensive work on the school enjoyment unit by Ballif and Crane, however, is reported in a later section.

Unit II: Seeing Oneself as a Learner

OIMB.--The Observation of Individual Motivation Behavior was used to time-sample the incidence with which children made choices of materials and continued to work with them throughout a free-play period. The criterion for whether or not the child's behavior would be recorded positively under this category was that he be engaged in constructive activity, e.g., playing with materials or other children, rather than in nonconstructive activity, e.g., wandering without apparent purpose or bothering other children. The emphasis was on productive behavior.

Because the instrument was developed for this investigation by the Center, inter-observer agreement data were collected to assure that behavioral descriptions were presented in objective terms. The numbers and per cents of intervals in which inter-observer agreement occurred are presented in Table 11. The unusually high agreement for behavioral observations, in spite of the fact that six categories of behavior were simultaneously recorded in the original instrument (as described in Chapter II), probably resulted from the extent to which presence or absence of behavior selected for observation could be easily distinguished and from the use of a full minute as the observation interval. The training period required to produce this level of agreement for a naive observer was no more than two half-days. Per cent of observer agreement is subject to a number of deficiencies, such as being dependent on the number of intervals, that might be obviated by use of more sophisticated indices of reliability (e.g., Cronbach, Gleser, Nanda, & Rajaratnam, 1972). This and the other observational approach used are considered pilot instruments that could be revised and refined if they were to be applied in subsequent studies.

Analysis of treatment and comparison classes of preschool and kindergarten children is presented in Table 12. Two observers often recorded data for separate halves of the classroom, since a single observer was adequately occupied with approximately 10 to 15 children. The sequence of the individuals under the "Observers" column is followed

Table 11

Numbers and Per Cents of Intervals with Inter-observer Agreement on the *OIMB*

			Agreement	
Classroom	Date	Observers	Number	Per Cent
KT1	1/4	1, 4	14/14	100
KT1	1/4	1, 4	21/23	91
PT2	1/5	2, 4	21/21	100
PT2	1/5	1, 3	24/24	100
PT2	1/6	3, 4	53/54	98
PT1	1/6	2, 3, 4	27/28	96
PT1	1/10	2, 3	29/29	100

Table 12

Numbers and Per Cents of Intervals of Recorded Behavior for Treatment and Comparison Classes on the OIMB

			Observer 1		Observer 2	
Classroom	Date	Observers	n	%	n	%
PT1	1/6	2, 4	17/17	100	25/28	89
	1/10	2	24/29	83		
PT2	1/5	1	23/24	96		
	1/6	4	52/54	96		
	1/12	1	20/21	95	18/21	86
PC1	2/9	2, 3	16/20	80	23/27	85
	2/16	2, 3	16/21	76	24/24	100
PC2	1/17	1	10/22	45		
	1/20	1	26/51	51		
KT1	1/4	1	13/14	93		
	1/4	4	20/23	87		
	1/4	2	29/33	88		
	1/7	2, 3	27/35	77	22/23	96
KT2	1/6	1, 2	25/32	78	33/39	85
	1/7	1, 4	22/24	92	40/42	95
KC1	1/11	3, 4	41/42	98	31/33	94
	1/13	1, 2	15/17	88	20/23	87

under the columns headed "Observer 1" and "Observer 2" on the occasions when a second observer was recording. On those days when inter-observer agreement was being recorded, however, only one observer's record was reported, the included record being the one with the lowest reported incidence of productive behavior. This conservative approach to reporting was assumed to give greater assurance that analyses of treatment and comparison groups would not be subject to observer bias, since observers were well aware of the identity of the treatment and comparison classes. Also, the inter-observer agreements were generally quite high and information provided by a second observer would tend to be redundant.

Percentages in Table 12 show that the children in the preschool treatment classes were engaged in productive behavior during free-play periods in 83 to 96 per cent of the intervals recorded. This unusually high rate of productivity for preschool children probably resulted from the length of the observation interval, a full minute, and the consequent extended opportunity for the child to engage in behavior that conformed to the definition. The first preschool comparison class did not appear to be markedly different from the treatment classes, although the second preschool comparison class was dramatically lower in productive behavior.

A major reason for the discrepancy between the preschool comparison classes in number of recorded intervals of productive behavior is that many of the ongoing activities in the motivation curriculum were probably a part of the first preschool teacher's regular routine but not of the second preschool teacher's, although neither teacher was familiar with this particular curriculum. Comments by observers in the classroom confirm this impression.

The kindergarten treatment and comparison classes appeared markedly similar in the extent to which they participated in productive behavior, both groups showing relatively high rates. The same general comments were made by observers in the kindergarten comparison classes as had been made in the preschool comparison class with high rates of productive behavior, i.e., that the teachers made use of motivation-producing ongoing activities even though not trained in specific techniques by the Center staff. This, of course, is no cause for dismay. A teacher need not have been imbued with principles espoused in the motivation curriculum to generate high incidence of productive behavior; nevertheless, systematic adherence to these principles should provide reasonable assurance that children will be productively engaged during free-play periods.

OGMB.--The Observation of Group Motivation Behavior was used to determine the frequency with which children expressed ideas in a 10- to 15-minute discussion period for the entire class. This behavior and others originally recorded with this instrument were culled from descriptions of ongoing activities in Unit II as potentially observable in group situations and as reflective of the child's concept of himself as a learner. This report is limited to "expresses ideas in a group," however, since the other behaviors occurred too infrequently to be observed with the approach employed.

Since this instrument was devised for the present investigation, as was the OIMB, inter-observer agreement data are reported as evidence for objectivity of scoring categories. The numbers and per cents of intervals in which inter-observer agreement occurred are presented in Table 13. Although some of these agreement indices reached 100%, two

Table 13

Numbers and Per Cents of Intervals with Inter-observer Agreement on the OGMB

Classroom	Date	Observers	Agreement n	Agreement %
PT1	1/10	2, 3, 4	28/45	62
PT2	1/5	1, 2, 4	12/24	50
	1/10	2, 3	40/48	83
KT1	1/5	2, 3, 4	62/75	83
	1/7	2, 3	28/36	78
	1/7	2, 3	34/36	94
	1/11	1, 2	75/75	100
KC2	1/11	2, 3	75/75	100
	1/13	1, 3	54/66	82

are relatively low, with agreements of 50% and 62%. Lower agreement would be expected when observers record behavior categories as they occur with a total group rather than with an individual child, as was true on the OIMB. Also, the lowest figure, 50%, reflected number of intervals agreed upon for three observers rather than two. The agreement indices generally are acceptable, however, with the noted exceptions.

The numbers and per cents of intervals in which "expressing ideas in the group" occurred are reported in Table 14, by classroom, date, and observer. The sequence of individuals under the "Observer" column is followed under the columns labeled "Observer 1," etc. These individuals all were observing the same situation. When low inter-observer agreement was evident, as presented in Table 14, the low and high per cents can be obtained by referring to figures in Table 15 for the dates of data collection. These data were obtained for the most part as children discussed a series of pictures, except on one occasion when they talked about a TV program.

Data vary across observers, occasions, and classrooms. For example, the KT1 group was far more vocal in expressing ideas on January 7 than on any other day, and the PT2 group was far more vocal on January 5 than on January 10.

Particularly because of variability within a single classroom and the few times that each was observed, to assume that the comparison classes, PC2 and KC2, might not have been more vocal on other occasions would be unwarranted. Nevertheless, if data on three days for the two comparison classes at all represent what might have been found had observations been extended, figures of 8%, 13% and 27% do not reflect

Table 14

Numbers and Per Cents of Intervals of Recorded Behavior for Treatment and Comparison Classes on the OGMB

Classroom	Date	Observers	Observer 1		Observer 2		Observer 3	
			n	%	n	%	n	%
PT1	1/10[a]	1, 2	17/45	38	24/45	53		
PT2	1/5[a]	1, 2, 4	9/24	38	11/24	46	12/24	50
	1/10[a]	2, 3	10/48	21	16/48	33		
PC2	1/20[a]	1	8/60	13				
KT1	1/5[a]	2, 3, 4	12/75	16	15/75	20	18/75	24
	1/7[a]	2, 3	22/36	61	16/36	44		
	1/7[b]	2, 3	7/36	19	7/36	19		
	1/11[a]	1, 2	13/75	17	13/75	17		
KT2	1/11[a]	1	25/54	46				
KC2	1/11[a]	2, 3	6/75	8	6/75	8		
	1/13[a]	1, 3	18/66	27	18/66	27		

[a] Large-group discussion of a series of pictures.
[b] Large-group discussion of a TV program.

a great deal of student participation. Figures for the treatment classes, on the other hand, sometimes were much higher, even taking a conservative estimate in the face of low inter-observer agreement. The extensive variability across occasions within a single class can probably be explained by certain unnoticed dissimilarities of contexts in which behaviors were recorded. Firm conclusions about effectiveness of the motivation curriculum in producing vocal expression of ideas in groups will require more extensive observations.

PARD.--The test of Persistence and Resistance to Distraction (Banta, 1970) was included to assess components of Units II, Seeing Oneself as a Learner, and Unit III, Purposive Responses. In Unit II, children are given reinforcement for both the process and the product of successful task completion; in Unit III, children learn to develop a plan before engaging in a task and to use it as a guide for subsequent performance. The PARD test is aimed at maintenance of attention to a task and adherence to an initial guiding plan for its completion in spite of distractions; it should provide an excellent assessment of this aspect of the curriculum.

The PARD tests were administered to the preschool and kindergarten treatment groups and to PC3 and KC2 following completion of Unit III, Purposiveness. The testing times were the third and fourth weeks of April and the first two weeks of May, although a small number of make-up tests were given as late as the last week of May in the kindergarten control class.

The Persistence scores for all except one child in the two preschool treatment groups were at the maximum score attainable, whereas a number of children in the PC2 group obtained lower scores. A Kruskal-Wallis

(Siegel, 1956) analysis of these highly skewed scores, presented in Table 15, rejected at the .01 level the null hypothesis that scores of these groups came from the same population. The treatment groups achieved far greater levels of performance on persistence than the comparison group. The column headed $\underline{R}^2/\underline{n}$ in Table 15 is the average of the squared sum of the ranks and reflects the relative magnitude of scores obtained by each group. A large value of $\underline{R}^2/\underline{n}$ indicates that a group obtained large rank values on that variable or low scores in the combined distribution of ranks for all groups.

The Persistence scores for the two kindergarten treatment groups were also generally at the maximum score attainable, but the scores for the KC2 group were also quite high. The difference between the treatment groups and the comparison group, while not significant, favored the treatment condition.

It is possible that persistence is an evolving learned phenomenon at ages four and five that may be encouraged by a curriculum designed to affect sustained task orientation through reinforcement of the processes and attainments involved in task completion. By the time a child is five or six, however, either persistence as measured by this test, or its prerequisites, may have been learned sufficiently in extracurricular experiences so that the effects of a curriculum are not so strongly manifested with respect to a comparison group.

The Resistance to Distraction scores for the preschool treatment groups were bimodally distributed, with the largest proportion of children at the maximum score that could be obtained, a smaller proportion at the lowest possible score, and a few scores scattered in between. A Kruskal-Wallis analysis of the preschool treatment and comparison

Table 15

Kruskal-Wallis Analyses of *Persistence and Resistance to Distraction*

Variable	Level	Groups	n	R^2/n	Kruskal-Wallis H*	Chi Squared (df = 2)	
						.95	.99
Persistence	Preschool	PT1	18	12,588	9.94	5.99	9.21
		PT2	19	11,875			
		PC3	19	21,896			
	Kindergarten	KT1	25	34,262	1.84		
		KT2	24	33,042			
		KC2	26	41,161			
Resistance	Preschool	PT1	18	11,858	12.01		
		PT2	19	8,697			
		PC3	19	27,856			
	Kindergarten	KT1	25	25,027	5.44		
		KT2	24	34,013			
		KC2	26	51,353			

*Corrected for tied ranks

group scores, presented in Table 15, led to rejection at the .01 level of the null hypothesis that the scores were sampled from the same parent distribution. The preschool treatment groups achieved greater Resistance to Distraction scores than the comparison group.

The Resistance to Distraction scores of the kindergarten treatment and comparison groups also were bimodally distributed. The tendency for more of the kindergarten treatment groups' subjects to obtain high scores than the comparison group was not quite so marked, however, as reflected in a Kruskal-Wallis value of H that approached significance only at the .05 level.

As with persistence, many children of preschool age generally do not seem capable of resistance to distraction. Yet this behavior was evident in the treatment groups, indicating that preschool children are amenable to a curriculum designed to promote motivated behavior. Children in kindergarten seem generally more able than younger children to resist distraction, however, but the proportion who can resist perfectly is matched approximately by the proportion who do not resist at all. The effect of the motivation curriculum upon the kindergarten children was not so striking as with preschoolers, perhaps because by age five and one-half the comparison children were learning resistance to distraction, as measured by the test, independently of the curriculum, but to a lesser extent than they learned persistence.

Unit III: Purposiveness

The Day Peter Planned. A test was designed to assess retention and transfer of the story "The Day Peter Planned" in the third unit of the curriculum. The children were told the story, in which a boy obtains personal satisfaction for planning and completing an activity, and were tested on the following day. At the completion of the third unit in the second and third weeks of February, the test was administered to the four treatment classes and to KC2 and PC3. The scoring scheme was verified by an independent scorer, who agreed on 312 of 318 or 98% of the item scores.

The range of scores that could be obtained on either retention or transfer was limited, and the obtained distributions of scores were highly skewed. Kruskal-Wallis (Siegel, 1956) analyses were applied to these data, as to the Persistence and Resistance to Distraction scores. As before, Table 16 shows $\underline{R}^2/\underline{n}$, reflecting relative values of scores in the groups.

The retention scores for the preschool treatment and comparison groups were not significantly different, indicating that the hypothesis of no differences in the distribution of scores could not be rejected. Transfer scores for the preschool groups, however, were significantly different beyond the .01 level, with the treatment group obtaining by far the smallest value of $\underline{R}^2/\underline{n}$, i.e., higher scores.

Although treatment and comparison group children retained information from the story equally well, treatment groups both appeared able to apply, i.e., to transfer, this information to their everyday existence far better than the comparison group. The preschool children in the motivation curriculum appeared to make much more sense out of transfer questions, such as "What will you do when you get back to your room?" and "What will you do when you get home from school?" Assuming that no differences occurred in after-story discussions among these groups, experiences in the motivation curriculum that are oriented toward

Table 16

Kruskal-Wallis Analyses of the Test, The Day Peter Planned

Variable	Level	Groups	n	R^2/n	Kruskal-Wallis H*	Chi Squared (df = 2) .95	Chi Squared (df = 2) .99
Retention	Preschool	PT1	12	7,381	3.80	5.00	9.21
		PT2	18	9,948			
		PC3	15	7,041			
	Kindergarten	KT1	20	40,275	21.44		
		KT2	20	16,675			
		KC2	22	11,002			
Transfer	Preschool	PT1	12	5,305	11.79		
		PT2	18	5,376			
		PC3	15	14,852			
	Kindergarten	KT1	20	26,499	20.12		
		KT2	20	9,592			
		KC2	22	28,153			

*Corrected for tied ranks

encouraging children to plan daily activities may strongly influence ability of a child to assimilate principles of planning and extend them to personal experiences.

The differences in retention scores for the kindergarten treatment and comparison groups were significant at beyond the .01 level, as presented in Table 16, with ranks for KT1 being much larger compared with the other two groups (i.e., their scores were lower). This difference in the extent to which children retained the information in the story may have resulted from differences in the way the story was read in the three groups but possibly may have been attributable to real differences in attention or retention. The transfer scores for the three kindergarten groups also differed significantly beyond the .01 level, but a somewhat different picture emerged compared with that for retention scores. Group KT1 did not retain the story well and was unable to transfer planning principles to daily classroom or home experiences; however, KC2 did retain the story well but also was unable to transfer principles. Group KT2, although retaining the story slightly less well than the comparison group, nevertheless was able to transfer principles much better than either the comparison group or the first treatment group.

Results of retention and transfer for the kindergarten groups did not demonstrate consistent superiority for the treatment groups over the comparison group; however, that KT2 performed better than KC2 on transfer, even though the groups were comparable on retention, strongly suggests that the motivation curriculum provides a solid foundation in principles of planning. The poor transfer performance of KT1 probably resulted from inaccurate retention of the story by this group, which may have been the consequence either of differences in real retention or in the style in which the story was read. The story was presented in the classrooms by the teachers on a day when Center staff could not be present, leaving no opportunity to appraise differences in reading style. This difficulty was avoided on subsequent occasions by having Center staff present stories and experiences on which assessment was based.

Unit IV: Instrumental Activity

Carrot Seed. The story "Carrot Seed" was read to the children as part of the motivation curriculum to illustrate how planning and instrumental activity interrelate in development of steps toward goal completion. The test contains three sections that evaluate, respectively, retention of story content, comprehension of principles of planning and instrumental steps in the story, and transfer of these principles to the child's own experiences.

Data obtained from this test made parametric analyses appropriate. Means and standard deviations of the three Carrot Seed scores--Retention, Comprehension, and Transfer--are presented in Table 17. Scoring was completely objective, except for the Transfer questions, which depended upon interpretation of the child's response. An independent judge agreed on the scoring of 110 out of 120 of these responses, and in the 10 cases of disagreement the discrepancy was only one point.

Simple analyses of variance were performed on each variable, contrasting the two treatment groups with the comparison group at each school level. Results are presented in Table 18. Retention and Comprehension scores for the preschool children indicated no significant differences between treatment and comparison groups. Transfer

Table 17

Means and Standard Deviations on Carrot Seed

Variable	Group	Treatment Condition	n	Mean	SD
Retention	Preschool	PT1	19	6.00	1.83
		PT2	16	6.13	1.86
		PC4	18	6.44	1.94
	Kindergarten	KT1	25	8.32	.99
		KT2	19	8.21	1.08
		KC2	23	7.48	1.62
Comprehension	Preschool	PT1	19	1.74	1.82
		PT2	16	1.75	2.04
		PC4	18	2.22	1.77
	Kindergarten	KT1	25	4.72	1.88
		KT2	19	4.79	1.81
		KC2	23	3.43	2.06
Transfer	Preschool	PT1	19	1.79	.92
		PT2	16	1.38	.88
		PC4	18	0.89	.58
	Kindergarten	KT1	25	2.48	.82
		KT2	19	2.37	.96
		KC2	23	1.61	.94

Table 18

Simple Analyses of Variance on Carrot Seed

Variable	Groups	Source	df	Mean Square	F	p
Retention	Preschool	Between	2	.96	.27	N.S.
		Error	50	3.52		
	Kindergarten	Between	2	4.83	3.02	N.S.
		Error	64	1.60		
Comprehension	Preschool	Between	2	1.37	.39	N.S.
		Error	50	3.52		
	Kindergarten	Between	2	13.09	3.52	<.05
		Error	64	3.72		
Transfer	Preschool	Between	2	3.75	5.74	<.01
		Error	50	.65		
	Kindergarten	Between	2	5.18	6.36	<.01
		Error	64	.81		

scores for preschool children, however, indicated significant differences beyond the .01 level between treatment and comparison groups, the latter obtaining the lowest value of the three means. Thus, although no differences were found in the extent to which children in the three groups retained or comprehended the story, significant differences favoring treatment groups were found in the extent to which preschool children could use the illustration in the story in their own school experiences.

Analyses of variance on the scores for the kindergarten group are also presented in Table 18. Between the treatment and comparison groups, differences on Retention were not significant but differences on Comprehension were significant at the .05 level, the two treatment classes outperforming the comparison class. Differences among the groups on Transfer were also significant, again with the two treatment classes outperforming the comparison classes. Hence, although kindergarten treatment classes did not differ appreciably from the comparison class in ability to retain information in the story, their ability to describe application of principles of planning and instrumental activity to the story and to relate these principles to their own experiences was definitely superior.

The general conclusion from data for both preschool and kindergarten treatment classes is that their performance is superior relative to comparison classes on transfer, regardless of retention of the story or comprehension of principles involved. The better transfer performance characteristic of treatment classes strongly suggests that the units on planning and instrumental activity were effective in attaining their objectives.

Instrumental Satisfaction. A test called Instrumental Satisfaction was designed to assess children's evaluation of a task that, without imposition of subjective self-evaluation, would be reasonably neutral. Children were requested to paste together five objects and, following the completion of each object, to mark one of three faces--happy, neutral, or sad--that reflected how they felt about their performance.* A negative self-evaluation on a similar neutral task has been related to low achievement by Katz (1967), particularly among boys. Insofar as the motivation curriculum aspires to instill satisfaction following task performance, as suggested in Unit IV, significant differences between treatment and comparison classes were predicted on Instrumental Satisfaction, irrespective of achievement level.

Teachers in the kindergarten classes were requested to identify children as high- and low-achieving students, in accord with Katz's procedures, and, in addition, to identify middle-achieving students. Only children designated in these three groups in each class were administered Instrumental Satisfaction. Preschool classes were not involved in this evaluation.

Means and standard deviations on Instrumental Satisfaction are shown in Table 19, accompanied by means and standard deviations for the Metropolitan Reading Readiness Test. Both sets of scores were submitted to a three- (achievement levels) by-three (groups) analysis of variance, results of which appear in Table 20.

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*As indicated earlier, the investigators, in view of experiences with response sets of young children in other contexts, maintain a skeptical attitude about the three-faces approach to eliciting responses but nevertheless used it here.

Table 19

Means and Standard Deviations of Metropolitan and Instrumental Satisfaction Scores for Kindergarten Groups

Group	Teacher Achievement Rating	Metropolitan		Inst. Satisfaction	
		Mean	SD	Mean	SD
KT1	H	64.20	2.95	9.20	1.30
	M	51.20	4.55	8.00	2.00
	L	45.40	5.03	7.40	2.88
KT2	H	71.80	4.97	9.40	1.34
	M	49.40	2.61	6.80	1.92
	L	26.00	5.79	8.20	1.79
KC2	H	84.00	16.40	7.80	2.05
	M	52.60	14.72	8.60	1.95
	L	18.60	5.59	8.20	2.05

Table 20

Analyses of Variance on Metropolitan and Instrumental Satisfaction Scores for Kindergarten Groups

Variable	Source	df	MS	F	p
Metropolitan	Between	8			
	Achievement (A)	2	77.87	<1.00	N.S.
	Treatment (T)	2	7043.47	9.95	<.01
	A x T	4	695.83	<1.00	N.S.
	Within	36	707.56		
Inst. Sat.	Between	8			
	Achievement (A)	2	.02	<1.00	N.S.
	Treatment (T)	2	4.42	1.13	N.S.
	A x T	4	4.52	1.16	N.S.
	Within	36	3.88		

Significant differences were found on the Metropolitan among the kindergarten groups but not among the three achievement levels as identified by teachers. Mean scores on the Metropolitan show that treatment group differences arose from exceptionally high reading readiness scores of children rated low in achievement by the teacher in KT1. This teacher's perception of her children's ability and their measured reading readiness were substantially different. The groups were nevertheless retained intact for analysis of the Instrumental Satisfaction scores, following Katz's procedures.

No significant differences were found among the three groups selected by teachers, whether for main effects of treatment and achievement level or the interaction effect. If real differences are assumed to exist among children in treatment groups rated high, medium, or low in achievement by teachers, the usefulness of the Instrumental Satisfaction test is questionable.

To determine whether or not results were being obscured by sex differences, as reported by Katz, inspection of the Instrumental Satisfaction scores was conducted separately for boys and girls. Differences in score distributions were not evident, so this approach was abandoned prior to formal analysis.

Equivocal results with this instrument might be explained by suggesting that children of kindergarten age did not understand the nature of the task. Anecdotal reports by examiners indicated that children at times manifested impulsive enthusiasm for the opportunity to rate themselves positively, altogether ignoring the instruction to reflect upon their product and mark how they felt about it. Another consideration is that a tendency to evaluate a product with a critical eye toward redesign and improvement, which is taught by the motivation curriculum, may have been confounded with a tendency to engage in self-depreciation, thereby limiting the magnitude of scores in the treatment groups.

Unit V: Evaluation

Design Evaluation. The self-evaluation unit of the curriculum purports to teach children an important and unifying principle in the composite of skills referred to as motivated behavior, viz., to inspect a product with respect to a standard and make appropriate revisions until images of product and standard coincide. A task was sought that generally could be performed with reasonable ease to a modestly acceptable criterion but that the child would be asked to evaluate and subsequently revise to a more stringent criterion.

The Design Evaluation test was intended to determine whether or not a child knew how to evaluate a product according to external (objective) and internal (subjective) criteria. The child was asked to copy a simple model design presented on paper and to evaluate the product objectively with respect to the standard. He was also asked to make either a letter (kindergarten) or a shape (preschool) and to evaluate it with respect to internal criteria. Scoring was based on the child's ability to verbalize strong and weak points of his drawing and to apply these observations to the subsequent product. Quality of the product was not relevant in determination of a child's score. Inter-scorer agreement occurred on 115 out of 123, or 85%, of the responses.

Data from Design Evaluation, being either highly skewed or restricted to a limited range of scores, were analyzed by the

Kruskal-Wallis test (Siegel, 1956). Results are presented in Table 21. As before, they are accompanied by $\underline{R}^2/\underline{n}$, the average squared sum of the ranks, a low value indicating predominantly low ranks in the combined distribution of ranked scores, with lower ranks designating higher scores.

Preschool children in treatment classes differed significantly from those in comparison class at the .01 level on both internal and external evaluation of designs they had produced. Children in treatment classes were more capable of indicating product features they would prefer to change and then going about revising the product to meet the designated standard, whether internal or external.

Kindergarten treatment classes also differed significantly at the .01 level from their comparison group in both internal and external evaluation. The ability to inspect and revise a product, particularly according to an internal criterion, is an extremely sophisticated skill that can be construed to result directly from the motivation curriculum.

Day Evaluation. A measure called Day Evaluation was designed to detect whether or not children in treatment groups had profited from reflecting upon their day's experiences and selecting something they felt good about and something they felt bad about. The activity had been included as a lesson in Unit V. Scores reflected the ability of a child to verbalize experiences about which he reported some affect, positive or negative. Responses were weighted according to degree to which the child referred to a specific experience involving objects or people as contrasted with a general experience. Owing to the sophistication of the response required, the test was administered only to kindergarten children. The inter-scorer agreement on these data was 97% (170 out of 174 responses).

Table 21

Kruskal-Wallis Analyses of Design Evaluation

Variable	Level	Groups	n	R^2/n	Kruskal-Wallis H*	Chi Squared (df = 2) .95	Chi Squared (df = 2) .99
Internal	Preschool	PT1	17	6,232	16.15	5.99	9.21
		PT2	16	7,634			
		PC3	19	26,011			
	Kindergarten	KT1	25	29,825	20.08		
		KT2	22	11,892			
		KC2	24	57,771			
External	Preschool	PT1	17	5,708	14.82		
		PT2	16	9,120			
		PC3	19	24,660			
	Kindergarten	KT1	25	25,472	11.31		
		KT2	22	20,041			
		KC2	24	49,868			

*Corrected for tied ranks

A Kruskal-Wallis analysis, presented in Table 22, indicated that the groups differed significantly at the .05 level. The values of $\underline{R}^2/\underline{n}$ showed that treatment groups obtained higher scores than the comparison group, indicating greater ability to recount experiences that during the day had had an affective impact.

The ability to describe one's daily experiences and to analyze whether or not they are favorable is an important correlate of ability to evaluate specific products. Certainly evaluation of an intangible object, such as "something that happened to you," is more difficult than evaluation of specific objects produced by the child. The importance of this behavior in terms of motivation to achieve can be seen in enhanced potential for the child to inspect more general experiences and select those on which he wishes to exert effort toward improvement.

TAAM. The Test of Autonomous Achievement Motivation was based on the concept that individuals who are achievement-motivated will select moderately challenging tasks as contrasted with tasks that are too easy or too difficult. The motivation curriculum, particularly in later units, encourages children to attempt tasks that are within their range of capability but difficult enough to be challenging. The test consists of four tasks, each of which contains items presented in order of increasing difficulty. The child responds to each item in sequence until he has failed and is then requested to select one item that he would prefer to perform again. The score is a weighted sum, across tasks, of the tendency to select items that to him have been moderately challenging.

Table 22

Kruskal-Wallis Analyses of _Day Evaluation_ Scores for Kindergarten Children

Group	n	R^2/n	Kruskal-Wallis H*	Chi Squared (df = 2) .95	Chi Squared (df = 2) .99
KT1	24	20,504	8.84	5.99	9.21
KT2	18	13,339			
KC2	24	43,308			

*Corrected for tied ranks

Children in each class were assigned randomly to receive either incentive or non-incentive instructions on this task to determine whether or not scores were responsive to experimental manipulation. Incentive instructions consisted of an appeal to exert particular effort in attempting to master a challenging task, whereas non-incentive instructions contained no such appeal. Use of incentive instructions was predicated in part on the finding by Veroff (1969) that very young children tend not to exhibit autonomous achievement motivation under neutral instructions.

Children presented with the motivation curriculum were predicted to exhibit greater achievement motivation than comparison children, and the incentive condition was predicted to produce enhanced achievement motivation relative to the non-incentive condition.

Table 23 shows means and standard deviations of autonomous achievement motivation for preschool and kindergarten treatment and comparison groups. Results for incentive and non-incentive conditions are presented separately in each group. Distributions of scores within groups did not appear markedly skewed, making parametric analyses acceptable.

A three- (two treatment groups and a comparison group) by-two (incentive conditions) analysis of variance was performed on the data for each educational level (Table 24). Neither main effects nor interaction effects were significant at the preschool or the kindergarten level.

As can be determined from the means and standard deviations, there was sufficient variability in the score distributions to reflect treatment effects, had they occurred. Since there was no reason to believe that one or more of the tasks differentially detected treatment

Table 23

Means and Standard Deviations
for Autonomous Achievement Motivation

Level	Group	Treatment	n	Mean	SD
Preschool	PT1	Incentive	10	3.50	2.51
		No-Incentive	8	3.75	3.24
	PT2	Incentive	10	4.30	1.49
		No-Incentive	9	4.22	2.62
	PC	Incentive	10	2.40	1.84
		No-Incentive	9	2.78	2.17
Kindergarten	KT1	Incentive	13	3.23	2.39
		No-Incentive	12	3.92	2.47
	KT2	Incentive	12	4.17	2.29
		No-Incentive	12	4.08	1.32
	KC	Incentive	13	4.15	2.76
		No-Incentive	13	3.61	2.43

Table 24

Analyses of Variance on Autonomous Achievement Motivation

Level	Source	df	MS	F	p
Preschool	Between	5			
	Group (G)	2	13.21	2.35	N.S.
	Incentive (I)	1	.47	.08	N.S.
	G x I	2	.26	.05	N.S.
	Within	50	5.63		
Kindergarten	Between	5			
	Group (G)	2	1.91	.35	N.S.
	Incentive (I)	1	.01	.01	N.S.
	G x I	2	2.39	.44	N.S.
	Within	69	5.43		

or curriculum effects, results were not analyzed by task. The possibility that children of this age do not express achievement motivation, at least as defined by this task, was not considered feasible due to variability of score distributions. The curriculum may not have been sufficiently powerful to have impact on autonomous achievement motivation as measured by the test.

Intensive Analyses of Intervention for Unit I (School Enjoyment) and Unit II (Self-Confidence) on a Small Number of Cases in New York City

As explained in Chapter III, extensive "experiences" designed to augment School Enjoyment and Self-Confidence, two of the five hypothesized components of motivation to achieve in school, were presented individually to four preschool children in New York City, under the direction of Ballif. Instruments involved are covered in Chapter II, and subjects and methods in Chapter III.

Results cannot be separated completely for the two sets of experiences, because the same four subjects were used for both sets of experiences and changes of teacher ratings and on the *Gumpgookies* test may be attributable to one or the other or a combination of the two. Table 25 presents overall findings.

$\underline{S}_1$ increased substantially in school enjoyment, as indicated by his pre- and post-test performances on *Woofles* and his responses recorded during the four *Structured Observations*. His gain score on the *Pictorial Self-Confidence Scale*, as well as more modest changes in responses recorded in the four *Structured Observations*, also suggested improvement in self-confidence. His motivation to achieve in learning also seems to have increased, as evidenced by a very large

Table 25

Scores of Ss on Woofles, Pictorial Self-Concept Scale, Structured Observations, Gumpgookies, and the Adkins-Ballif Motivation Rating Scale

S	Woofles Pre-test	Woofles Post-test	Pictorial Self-Concept Scale Pre-test	Pictorial Self-Concept Scale Post-test	*	Structured Observations 1	2	3	4	Gumpgookies Pre-test	Gumpgookies Post-test	Adkins-Ballif Rating Scale Pre-test	Adkins-Ballif Rating Scale Post-test
S_1	20	27	64	74	a.	0	6	4	9	90	122	49	51
					b.	0	2	3	3				
S_2	23	30	66	72	a.	1	1	3	3	90	127	47	50
					b.	0	2	2	2				
S_3	20	29	69	75	a.	2	1	4	8	75	117	47	52
					b.	1	6	2	4				
S_4	21	30	66	65	a.	1	8	10	6	106	107	42	52
					b.	2	2	1	0				

*In this column, row a refers to Structured Observation scores related to school enjoyment, row b to such scores related to self-confidence.

increase in his score on *Gumpgookies* and smaller gains on the *Motivation Rating Scale*. When performance on items designed to measure expectations of affect on this rating scale were examined, however, S_1 increased from 9 to a maximum score of 12, indicating that his gains on this instrument were due primarily to an increase in expectations of positive affect. S_1's teacher indicated that he was quick to learn and that, during the period of experimental treatment, he had become increasingly involved in his work and able to work for a long period of time on any one activity. Although originally very shy and having some language difficulties in making himself understood, he had also become increasingly articulate.

S_2 also increased substantially in school enjoyment, as indicated by pre- and post-test performance on *Woofles* as well as less substantial gains on responses recorded during the four *Structured Observations*. Likewise, he gained confidence in ability to learn in school, as shown by gain on the *Pictorial Self-Concept Scale* and smaller gains on responses during the *Structured Observations*. His overall motivation to achieve in learning also increased, as witness a sizeable increase in score on *Gumpgookies* and smaller gains on the *Motivation Rating Scale*. S_2's teacher described him as a child with a very short attention span but indicated that during the period of experimental treatments he had become increasingly interested in work in the classroom, resulting in improved ability to complete a task. She also reported, as had been seen by the *E*s, that he had been absent from school as much as 40% of the time and that his absence had made it impossible for him to learn as much as the other children. Although S_2 completed the same number of treatment experiences as the other *S*s, his absences prohibited as much spacing between experiences as had been planned. This may in part account for the fewer responses indicating expectations of affect recorded during the Structured Observations. This small number of responses, however, is also partially attributable to the limited attention span of $\underline{S}_2$. His rating on the self-concept component of the Motivation Rating Scale increased from 9 to 11 out of a possible 12.

Results for $\underline{S}_3$ are similar to those of $\underline{S}_1$ and $\underline{S}_2$. He also increased substantially in school enjoyment and self-confidence, as indicated by pre- and post-test performances on Woofles and the Pictorial Self-Concept Scale, as well as responses recorded during the four Structured Observations in both instances. Great increase in motivation to achieve in learning was reflected in his scores on Gumpgookies and ratings on the Adkins-Ballif Motivation Rating Scale. His teacher described him as one who learned slowly but concentrated on his tasks. She felt that he had improved considerably during the experimental treatment, particularly in his confidence in his abilities to accomplish a variety of tasks and to learn things he had not previously been able to master.

Although $\underline{S}_4$ showed appreciable increase in school enjoyment, as revealed by her records on Woofles and the Structured Observations, her positive affective responses dropped during the final Structured Observation. She did not, however, show progress in self-confidence. Evidence for an increase in overall motivation is conflicting: her post-test score on Gumpgookies did not increase, but the teacher rating did. The sum of ratings on items designed to measure expectations of affect increased from 8 to the maximum score of 12. The teacher interview revealed that $\underline{S}_4$ had problems relating and interacting effectively with peers, which interfered with her adjustment and performance of academic tasks as well as her affective responses to school--a statement somewhat contradictory to the final teacher ratings on the affective component of the scale.

Experiences designed to increase school enjoyment appear to have been effective for the four children, and experiences for increasing self-confidence seemed to work well with three of the four. It does seem possible, then, to design experiences specifically for increasing school enjoyment and self-confidence in preschool children. Increases in both school enjoyment and self-confidence should also increase overall motivation to achieve in school learning, a conclusion apparently supported in general by the results. However, some cautions are noted below.

Implications of the findings, if they can be substantiated on larger numbers of cases and with experimental controls, are numerous. Not only may it be possible to create such experiences for all children, but it is also important to ask what kinds of experiences children are now being exposed to that result in many expecting negative affect in school situations and lack of confidence in their ability to achieve. It seems critical to design carefully the experiences presented to preschool children.

However, results reported for this very small group of four children required probably somewhat over 13 hours of concentrated work of an experienced research worker per child, not to mention such necessary matters as preparation time, transportation time, additional testing and test scoring time, time for teachers, and so on. Moreover, there were no control or comparison cases, even among children exposed to the same approach. Indeed, strong Montessori advocates might claim that equally striking results might have been found for any randomly selected children in the class not experiencing the interventions described here. It must be admitted that this is possible, although the investigators do not think it probable. Only much more extensive experimental work, with appropriate controls, could provide incontrovertible evidence. Nonetheless, the striking results reported above are at least suggestive.

Teacher Adherence to the Curriculum Design

Special curricula often are presented and evaluated without guarantee that the teacher's behavior specifically conforms to the prescribed standards. The result is that conclusions regarding lack of effectiveness of a curriculum instead may reflect lack of effectiveness of teacher training. That is, if the teacher was not trained effectively to implement the curriculum as it was designed, the failure of students to attain the curriculum objectives has no bearing on procedures specified in the teacher's manual of instructions.

In the study reported here, teacher performance was closely monitored throughout the academic year. Teacher training was conducted with workshops that began with an overview of the curriculum and continued with one half-day workshop for each curriculum unit. Fundamentally, this was the same procedure as had been followed in previous years (Adkins & Espinosa, 1971; Adkins & O'Malley, 1971). This year, however, each classroom was visited twice weekly for at least an hour per visit by two Center staff members, who observed the teacher as she conducted the curriculum and offered suggestions and support where they obviously were needed. The teachers appreciated this sustained contact and developed a harmonious relationship in which suggestions and recommendations were accepted. The Center staff, based on their observations, reported that applications of the motivation curriculum in previous years could not possibly have approached the faithfulness to the intent and design as was evident this year. It was suspected that teachers in previous years could easily have ignored the ongoing activities and attended only to the specific activities which are more explicitly described. The ongoing activities are, however, the essence of the motivation curriculum, and failure to present them indicates that the curriculum has not been applied.

A second approach to guaranteeing that the curriculum presentation was faithful to the described procedures was to select specific teacher ongoing activities from the curriculum and rate teachers on the extent to which they followed the prescription. Each statement (Appendix N) was rated by two Center staff on a scale from 1 to 4 as it applied to each teacher. Statements were categorized by the unit of the curriculum to which they applied, yielding information on teacher correspondence to the curriculum procedures for each unit.

The per cents of ratings of 4 received by each teacher, showing high conformity to the curriculum, are presented separately for each rater in Table 26. This table confirms the overall impression of extremely high conformity to the curriculum procedures but with strong individual differences among teachers. For example, the teacher in PT1 received the highest ratings in most units and was followed by the teacher in KT2. The teacher in KT1 was usually rated next and the one in PT2 as lowest.

Table 26

Per Cents of Total Conformity of Teachers to the Curriculum Units

			Per Cent of Total Conformity							
		Class:	PT1		PT2		KT1		KT2	
Unit	Description	Rater:	R1	R2	R1	R2	R1	R2	R1	R2
I	School Enjoyment		83	96	67	83	53	72	80	86
II	Conceptual Responses		92	89	64	69	67	86	86	78
III	Planning		90	85	50	55	60	65	85	75
IV	Instrumentation		94	85	62	62	75	85	94	85
V	Evaluation		83	100	59	67	75	67	83	83
Total			88	92	62	70	63	77	85	82

Appropriateness for Kindergarten Children

The third objective of this investigation was to determine whether the motivation curriculum was developmentally more appropriate for children in preschool or for those in kindergarten. Few changes were made in the curriculum as it was presented to either educational level, so information relative to this objective should have immediate bearing on the curriculum in the current manual.

Information from two sources was sought in assessing the curriculum effectiveness at the two educational levels. First, comments from teachers and from Center staff members were solicited to identify differential reactions regarding appropriateness of the curriculum on the part of individuals who were presenting it and those who were monitoring it. Little if any difference was detected in comments of preschool and kindergarten teachers.

A second source of information was relative comparison at each educational level of objectives achieved, as reflected by the criterion-referenced tests which were administered to both preschool and kindergarten classes and for which meaningful data were obtained. Results of this comparison are presented in Table 27. The name of the instrument is accompanied by a description of the behavior it is designed to assess. Also, significant results relative to the comparison group are indicated by a plus (+) in the column headed by the name of the class, whereas no differences are indicated by an equals (=) sign, and negative results are indicated by a minus (-).

Significant findings for preschool surpassed those for kindergarten children. Whether or not this represents a strong indication that the motivation curriculum is more appropriate for preschool children

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Table 27

Comparison of Preschool and Kindergarten Children on Criterion-Referenced Tests

Instrument	Preschool		Kindergarten		Behavior
	PT1	PT2	KT1	KT2	
OIMB	+	+	=	=	Productive behavior during free play
PARD	+	+	=	=	Persistence
	+	+	=	=	Resistance to distraction
Peter Planned	=	=	-	=	Retention of story elements
	+	+	-	+	Transfer of principles to daily experiences
Carrot Seed	=	=	=	=	Retention of story elements
	=	=	+	+	Application of principles within the story
	+	+	+	+	Transfer of principles to daily experiences
Design Evaluation	+	+	+	+	External criteria
	+	+	+	+	Internal criteria
Autonomous Achievement Motivation	=	=	=	=	Selecting challenging tasks
Total Plusses	14		9		
Total Equals	8		11		
Total Minuses	0		2		

is conjectural, however, since no guarantee is available that a difference on five criterion-referenced tests is of sufficient magnitude to warrant such a conclusion. Findings are nevertheless suggestive that some skills in the curriculum more appropriately may be taught to the younger group.

CHAPTER V

SUMMARY AND CONCLUSIONS

A motivation curriculum (Adkins & Ballif, 1971) was presented in two preschool and two kindergarten classes in Honolulu during the 1971-72 academic year. New exercises related to two units of the curriculum were developed and tried out individually with four children in New York City. The major objectives of this year's investigation were: (a) to evaluate the extent to which objectives of the curriculum were being attained by using criterion-referenced tests to supplement evaluation with the Gumpgookies; (b) to increase probability that the curriculum was implemented according to its design by using extensive in-service training; (c) to extend use of the curriculum to kindergarten children to determine whether or not the expected outcomes are developmentally appropriate for older children, and (d) to explore effects of intensive individual exercises pertaining to two curricular units.

Analyses of results for the first objective were differentiated by the nature of the dependent variable used in the assessment, i.e., whether the variable provided general or specific information regarding curriculum effects. Variables considered to provide general information were Gumpgookies scores and attendance records, whereas variables that were considered to provide specific information were selected or newly developed criterion-referenced tests.

In terms of general curriculum effects, analyses of covariance using the Gumpgookies resulted in significant differences between treatment and comparison preschool classes on adjusted post-test total score. Significant differences in preschool classes were also found for

Factor 5, Evaluation. The motivation curriculum was successful in increasing overall motivation to achieve in preschool children. Subsequent analyses might well be performed on the relatively unreliable factor scores, in which different approaches to adjusting for response sets might be attempted. The Gumpgookies analysis on kindergarten children was conducted by comparing pre-test with post-test scores for the two treatment classes. Significant gains were made on Factor 4 (Instrumental Activity), Factor 5 (Evaluation), and the total score, but only in classes for which the pre-test score was initially low. The motivation curriculum may produce significant gains in children of kindergarten age who are initially low in motivation to achieve. Analysis of attendance records did not reveal systematic differences between treatment and comparison classes at either preschool or kindergarten levels.

In terms of specific curriculum effects, analyses with criterion-referenced tests were reported within each unit of the motivation curriculum.

For Unit I, School Enjoyment, the Woofles and Doll Play tests were given in an attempt to determine the extent to which children expressed desire to participate in school-related activities that reflected motivation to achieve. Difficulties in administering and scoring these tests precluded meaningful statistical analyses.

The second unit, Conceiving of Oneself as a Learner, was evaluated with two classroom observation instruments and a test of persistence and resistance to distraction. Results of analyses with the first observation instrument, designed to detect differences in productive behavior, indicated that both preschool treatment classes showed a higher rate of productive behavior than one of the comparison classes but not the other. Kindergarten treatment and comparison classes all showed high rates of productivity. Some teachers may have acquired the motivation curriculum techniques that generate productivity in children, but for others who lack these techniques, as many do, the motivation curriculum may be extremely useful in enhancing their skills. Results with the second observation instrument, which provided information concerning a child's tendency to express comments in a group discussion, were somewhat variable across observers and situations; the implication was that more refinement of the instrument or more observations were needed before conclusions could be drawn regarding effects of the motivation curriculum on expressing ideas in a group.

Persistence and resistance to distraction scores for preschool treatment groups were significantly higher than those for comparison groups, suggesting that the motivation curriculum was effective in enhancing development of these skills. For the kindergarten groups, however, persistence scores were not significantly different in the treatment and comparison classes, and differences in resistance to distraction scores only approached significance. The trend was nevertheless for greater resistance in the kindergarten treatment groups. Persistence and resistance to distraction were seen as two complementary skills that during the preschool years are rapidly developing and which the motivation curriculum appeared to enhance.

The evaluation of the third unit, purposiveness, was conducted with a criterion-referenced test of a story read to the children in which a boy finds satisfaction in planning his daily activities. The test requests information pertaining to retention of the story elements and transfer of principles to the child's home and school experiences. Among preschool children, retention of the story elements was comparable for the treatment and comparison groups, whereas transfer of the story principles was significantly superior for the treatment groups. Kindergarten children in one of the treatment groups showed poor retention, which may have resulted from the style of the story reader, but the second treatment group and the comparison groups both retained the story relatively well. The only group to transfer the story principles, however, was the second treatment group. These results strongly suggest that the motivation curriculum communicates principles of planning that children are capable of retaining and applying to their daily experiences.

The fourth unit of the motivation curriculum, instrumental activity, was evaluated with two criterion-referenced tests, one that assessed understanding of principles in a story read to the children and a second that assessed self-satisfaction from instrumental activity. The first test was designed to evaluate children's knowledge of the story with respect to retention of story elements, application of principles within the story, and transfer of principles to the child's own experiences. On retention of the story, neither preschool nor kindergarten children differed significantly from their respective comparison groups. On application of principles, preschool treatment groups were not significantly better than their comparison group, but kindergarten treatment groups were. The test of transfer resulted in significant differences between treatment and comparison groups for both preschool and kindergarten children. Regardless of retention of story elements or application of principles, children presented with the motivation curriculum appeared better able to transfer principles to personal experiences than a comparison group. Self-satisfaction from instrumental activity was evaluated by requesting children to perform a reasonably neutral task, viz., constructing simple objects by pasting components of various shapes and colors together on a piece of paper, and then requesting them to rate the satisfaction they felt regarding the product by marking a happy, neutral, or sad face. Since this test was purportedly related to school achievement, groups of low, medium, and high achievement identified by the teacher in each class were used in the analysis. The test was presented only to kindergarten children. No significant differences were found in analysis of variance, whether between treatment and comparison groups, among achievement groups, or in the interaction term. Inspection of score distributions by sex of subject did not show marked trends that should be analyzed. It was suggested that the motivation curriculum may actually teach children to be more circumspect in their evaluation of instrumental activity, which then may suppress the tendency to give positive self-evaluations.

Three tests were administered in the assessment of the fifth curriculum unit, which dealt with ability to evaluate a product and to detect characteristics that could be improved in a subsequent revision. The first test was to determine the extent to which children possess external (objective) and internal (subjective) criteria for evaluation of a self-created product. Preschool and kindergarten treatment groups significantly exceeded comparison groups in ability to use external and internal criteria to revise and improve a product. The second test was to determine the extent to which children could verbalize specific experiences, whether positive or negative, that took place during the day. This test was administered only to kindergarten children. Treatment groups were both significantly more capable of describing specific experiences than were the comparison groups. The third measure was developed as a test of autonomous achievement motivation or the ability to select tasks that, on the basis of personal experience, are challenging rather than too easy or too difficult. Children in each class were randomly assigned to receive either incentive or no-incentive instructions to urge them in the direction of more challenging tasks. No significant differences were found for either preschool or kindergarten children in analyses of variance with treatment vs. comparison group main effects, with incentive or no-incentive group main effects, or for the interaction term. The experimental manipulations and the treatment conditions may not have been sufficiently powerful to have impact on autonomous achievement of children in the age range for this study.

In evaluation of the first objective, which pertained to evaluation with both criterion-referenced and norm-referenced tests, the motivation curriculum showed strong indication of accomplishing its objectives in a number of different facets of motivation to achieve. The criterion-referenced tests appeared to be a useful supplement to the Gumpgookies in this assessment.

The second objective was concerned with correspondence between teacher behavior and curriculum design, i.e., with whether or not teachers were implementing the curriculum faithfully. Ratings of teacher behaviors that specifically pertained to the motivation curriculum indicated that all teachers in the treatment groups were generally adhering to prescribed procedures. Nevertheless, individual differences in teacher fidelity were evidenced and were fairly stable across curriculum units.

The third objective was to determine whether or not the expected curriculum outcomes are developmentally appropriate for kindergarten children. Although reports by teachers and by Center staff did not suggest that the curriculum objectives or procedures are more appropriate for preschool than for kindergarten children, the relative incidence of significant findings on criterion-referenced instruments showed that preschool children attained the curriculum objectives relative to their comparison groups more often than kindergarten children. This is only a suggestive finding, however, in that the discrepancy between incidence of significant findings for the two groups was not exceptionally large.

Results with respect to the fourth objective, that of exploring intensive individual relations between an experienced adult and a preschool child designed to enhance particular aspects of school-related motivation, are highly provocative. Although recognizably the approach used does not meet standards of random assignment of subjects to experimental and control conditions and is in no way amenable to statistical treatment, gains on Gumpgookies total score achieved by three of the four subjects after the two series of special experiences are phenomenally greater than those observed heretofore for subjects exposed by regular teachers to the general motivation curriculum. The experiences that are now available probably could be adapted by a teacher for use with small groups. Some persons may suspect that in certain instances the child simply learns types of responses that will be approved on the Gumpgookies test or other measures devised for assessing the particular objectives. In the long run, directly observed and recorded motivated behavior, not just production of approved responses on paper-and-pencil instruments, must provide the answers, as documented in other sections of this report.

One of the expected contributions of this entire report has been to provide an analysis of motivation to achieve in school in which specific objectives culled from the curriculum were evaluated. The use of criterion-referenced measurements to supplement summative evaluation is acknowledged here as an important contribution to the assessment process, without which details concerning the effectiveness of specific procedures in attaining their objectives would never be revealed. This approach goes far beyond the usual testing procedure in educational evaluation in which large numbers of instruments are administered pre- and post-treatment in hopes of finding among those available a meaningful pattern from the intervention. Rather, the approach advocated here is to inspect the curriculum in detail and extrapolate from important objectives the criterion-referenced instruments to be included in the assessment. As with some of the tests used here, transfer items are often used to reveal the extent to which the child understands the generality of objectives that in the curriculum have been tied to specific content or procedures. The results of the present study lend testimony to the effectiveness of this approach in curriculum evaluation.

REFERENCES

Adkins, D. C., & Ballif, B. L. Motivation to achieve in school. Final report. Center for Research in Early Childhood Education, Education Research and Development Center, University of Hawaii, 1970.

Adkins, D. C., & Ballif, B. L. Preschool motivation curriculum. Center for Research in Early Childhood Education, Education Research and Development Center, University of Hawaii, 1971.

Adkins, D. C., & Ballif, B. L. A new approach to response sets in analysis of a test of motivation to achieve. Educational and Psychological Measurement, Fall, 1972.

Adkins, D C., & Espinosa, R. Programmatic research on preschool language, quantitative, and motivation curricula combined with parent participation. Final report. Center for Research in Early Childhood Education, Education Research and Development Center, University of Hawaii, 1971.

Adkins, D. C., & O'Malley, J. M. Continuation of programmatic research on curricular modules for early childhood education and parent participation. Final report. Center for Research in Early Childhood Education, Education Research and Development Center, University of Hawaii, 1971.

Adkins, D. C., & Payne, F. Age-normed Z-scores for the 75-item randomized individual form of Gumpgookies. Center for Research in Early Childhood Education, Education Research and Development Center, University of Hawaii, 1971.

Atkinson, J. W., & Feather, N. T. A theory of achievement motivation. New York: John Wiley & Sons, 1966.

Banta, T. J. Tests for the evaluation of early childhood education: the Cincinnati Autonomy Test Battery (CATB). In J. Helmuth (Ed.), Cognitive studies. Vol. 1. New York: Brunner/Mazel, 1970. Pp. 424-490.

Biber, B., Shapiro, E., & Wickens, D. Promoting cognitive growth. Washington, D. C.: National Association for the Education of Young Children, 1971.

Bolea, A. S., Felker, D. W., & Barnes, M. D. A pictorial self-concept scale for children in K-L. Journal of Educational Measurement, 1971, 8, 223-224.

Cronbach, L. J., Gleser, G. C., Nanda, H., & Rajaratnam, N. The dependability of behavioral measurements. New York: John Wiley, 1972.

Engleman, S. Preventing failure in the primary grades. Chicago, Ill.: Science Research Associates, 1969.

Hildreth, G. H., Griffiths, N. L., & McGauvran, M. E. Metropolitan Readiness Tests. New York: Harcourt, Brace & World, 1966.

Horst, P. Factor scores independent of item traits. Center for Research in Early Childhood Education, Education Research and Development Center, University of Hawaii, Honolulu, 1971.

Katz, I. The socialization of motivation in minority group children. In D. Levine (Ed.), Nebraska symposium on motivation. Vol. 15. Lincoln, Nebr.: University of Nebraska Press, 1967. Pp. 133-191.

Kraus, R. The carrot seed. New York: Harper and Row, 1945.

Medley, D. M., & Mitzel, H. E. Measuring classroom behavior by systematic observation. In N. L. Gage (Ed.), Handbook of research on teaching. Chicago: Rand McNally, 1963. Pp. 247-328.

Piers, E. V., & Harris, D. B. Age and other correlates of self-concept in children. Journal of Educational Psychology, 1964, 55, 91-95.

Risely, T. Spontaneous language and the preschool environment. In J. C. Stanley (Ed.), Preschool programs for the disadvantaged. Baltimore, Md.: Johns Hopkins University Press, 1972.

Siegel, S. Nonparametric statistics for the behavioral sciences. New York: McGraw-Hill, 1956.

Taba, H. Teacher's handbook for elementary social studies. Reading, Mass.: Addison-Wesley, 1967.

Terman, L. M., & Merrill, M. A. Stanford-Binet Intelligence Scale. Manual for the third revision, Form L-M. Boston: Houghton Mifflin, 1960.

Veroff, J. Social comparison and the development of achievement motivation. In C. P. Smith (Ed.), Achievement-related motives in children. New York: Russell Sage Foundation, 1969. Pp. 46-101.

Weick, K. W. Systematic observational methods. In G. Lindzey & E. Aronson (Eds.), The handbook of social psychology. Vol. 2. Reading, Mass.: Addison-Wesley, 1968. Pp. 357-451.

Winer, B. J. Statistical principles in experimental design. 2nd. ed. New York: McGraw-Hill, 1971.

APPENDIX A

OBSERVATION OF INDIVIDUAL MOTIVATION BEHAVIOR (OIMB)

Instructions

Materials

Clipboard, OIMB record forms, pairs of consecutive letters of the alphabet for each child, stopwatch, pencil.

Procedures

Place duplicate letters, one on the front and one on the back of each child. Assign one half of the class (by letter) to one observer and one half to a second observer. Note on the record form which letters are assigned to each observer.

Observe only during a free-play time, when children are free to make their own choice of activity. Locate the child with the first letter assigned and start the stopwatch. At the beginning of the one-minute observation, record by symbol (DC, doll corner; BL, blocks, etc.) the activity the child has chosen on the top row of the "makes choices' section of the record form. If the child is not involved in any activity during the minute of observation, record a minus in the appropriate square.

At the end of each one-minute observation, record a plus or minus in the top row of each of the succeeding sections, using the criteria stipulated on the record form.

Locate the next child in order and start the stopwatch immediately, proceeding in the same manner until all assigned subjects have been observed for one minute. Then return again to the first child and start the second minute of observation, recording for each child in order on the second row of each section of the record form. Also record a third minute of observation for each child on the third row of each section of the form, so that if possible during one free-play period of observation, data will be collected in three one-minute segments for each child in the class. If the class has more than 20 members, divide them among three observers.

Scoring

Score each segment ("makes choices," etc.) by computing the per cent of one-minute time intervals in which the behavior occurred relative to the total number in which it was observed.

1971-72

OBSERVATION OF INDIVIDUAL MOTIVATION BEHAVIOR (OIMB) CHECKLIST

One-minute Observations

Teacher__________ School__________ Observation I:\_____ to _____

Observation II:_____ to _____

Observer__________ Date__________ Observation III:_____ to _____

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
MAKES CHOICES (gets involved in some activity as opposed to aimless wandering--doll corner, DC; blocks, BL; puzzles, P; painting, FA; shapes, SH; books, B.) Any such symbol signifies + (positive).																										
WORKS INDEPENDENTLY (w/out T. prodding or supervising. Note: If T. or other adult comes unsolicited to interact positively, give A+; if adult interacts negatively, give A-.)																										
PERSISTS IN A TASK (keeps on with activity during period of observation.)																										
TAKES PRIDE IN HIS WORK (calls anyone's attention to what he has made or done.) Note: indicate C (child), T (teacher), or A (adult).																										
INITIATES CONVERSATION WITH THE TEACHER (goes up to T. and tells her something, other than tattling or asking for help.)																										
ASSUMES RESPONSIBILITIES (when T. gives something to do, e.g., to get out the records, to set up the flannelboard, to get out the clay, responds right away.)																										
SHOWS CURIOSITY (stops and looks at something of interest like the science corner or asks a question indicating he wants to know about something.)																										

APPENDIX B

OBSERVATION OF GROUP MOTIVATION BEHAVIOR (OGMB)

Instructions

Materials

Clipboard, OGMB record forms, a pair of letters of the alphabet for each child, stopwatch, pencil; set of pictures for the teacher selected from Instructo set #1215 'Understanding Our Feelings.'

Procedures

Place duplicate letters on the front and back of each child. Observe only during a time when the whole class is assembled for a 10- to 15-minute discussion period. Provide each teacher in both the treatment and control classes with the same set of pictures or the same story to be used as a basis for discussion, to eliminate any response differences due to variation in the materials.

Using a stopwatch, observe for a three-minute period. Whenever a child exhibits one of the behaviors indicated on the record form, record a plus in the top row of the appropriate section, under that child's letter.

For three behaviors, "listens attentively," 'participates in group activity," and 'knows what is expected as a member of the group," indicate negative responses only, by putting a minus in the appropriate square in the top row.

At the end of the first three-minute period, set the stopwatch and start a new observation segment by recording responses in the second row of each section of the record form. Follow the same procedure for the third three-minute period, recording in the third row of each section.

Scoring

Score each section by computing the per cent of individual subjects who exhibit the behavior positively one or more times during a three-minute period, relative to the total number of subjects observed.

1971-72

OBSERVATION OF GROUP MOTIVATION BEHAVIOR (OGMB) CHECKLIST
Three-minute Observations

Teacher________________ School________________ Activity________________ Observer________________ Date____________

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
*LISTENS ATTENTIVELY (shows definite interest in what is happening; attention is not focused elsewhere.)																										
*PARTICIPATES IN GROUP ACTIVITY (such as singing, response to teacher's questions, any physical activity called for, etc.)																										
EXPRESSES IDEAS IN THE GROUP (individual ideas as opposed to collective group responses.)																										
PERFORMS IN FRONT OF GROUP (V) Voluntary; (R) Requested, such as, "Joey, will you come and _____ for us?"																										
MAKES CHOICES AFFECTING THE GROUP (If teacher asks for choice of song, game, etc., child suggests one.)																										
*KNOWS WHAT'S EXPECTED AS MEMBER OF CLASS (e.g., comes quickly to the circle and sits down when teacher calls; gets out and puts away materials as indicated.)																										
SHOWS SOME EVIDENCE OF SELF-AWARENESS (recognizes name and/or parts of body.)																										

*Score only negative behavior here (-).

APPENDIX C

PERSISTENCE AND RESISTANCE TO DISTRACTION TEST

Instructions

Materials

Puzzle (as indicated below) and eight wooden cubes.

Procedures

Administer the Persistence and Resistance to Distraction Test in a room with minimal distraction. Have the child sit across a table from the tester. Place the replacement puzzle on the testing table with the horseshoe-shaped piece facing the tester. Say, WE'RE GOING TO WORK ON A PUZZLE. SEE, IT'S DIFFERENT FROM THE PUZZLES YOU'VE DONE BEFORE. THERE ARE SPACES BETWEEN THE PIECES. Rub finger in several different spaces between the figures. SOME OF THESE PIECES COME OUT. Lift the figure of the boy out of the tray. WHEN WE PUT IT BACK, IT HAS TO LIE FLAT; IT CAN'T REST ON ANOTHER PIECE. SEE, THIS IS NOT FLAT (demonstrate, using the figure of the boy) BUT THIS IS FLAT (demonstrate). Placing the boy figure on top of another piece, say, THIS IS NOT FLAT. YOU PUT THE PIECE FLAT. Let the child put the piece flat. GOOD. Repeat once again, placing the figure of the boy on top of another piece and have the child put it flat. I'M GOING TO TAKE OUT SOME OF THE PIECES. Remove the "horseshoe" and the "boy," placing the horseshoe on top of the boy at the child's left, then place the "plane" and "pear" in that order on top of the other two pieces. Rotate the puzzle 180° so that the horseshoe is facing the child. NOW YOU PUT THE PIECES BACK, MAKING SURE THAT ALL OF THE PIECES LIE FLAT.

Using a stopwatch, begin recording observations of the child's behavior at 20-second intervals for two minutes. Prompting, while permissible, is limited to the words PUT ALL THE PIECES IN FLAT, in response to requests for help, wandering away from the task, looking up as if finished, or requesting approval.

If a child completes the puzzle within the two-minute period, remove the pieces and say, LET'S SEE WHETHER YOU CAN PUT THE PIECES IN AGAIN. Continue scoring as before. When two minutes have elapsed, place eight wooden cubes on the table to the child's right. Say, YOU MAY EITHER PLAY WITH THESE BLOCKS OR YOU MAY FINISH PUTTING THE PUZZLE PIECES BACK. The child has one minute to continue with the puzzle or to play with the distracter blocks. After one minute, terminate the test by saying, THIS IS A HARD PUZZLE. LET ME HELP YOU PUT THE PUZZLE BACK TOGETHER.

PERSISTANCE AND RESISTANCE TO DISTRACTION

Scoring

"Two scores are derived from each protocol: Persistence, based on the first two minutes of activity; and Resistance to Distraction, based on the final minute of activity with the distracter blocks present" (Banta, 1970, p. 462).

During the first two minutes, goal-directed behavior is scored two points for each 20-second period; while non-goal-directed behavior is scored minus one point for each 20-second period it appears. A constant of +12 is added to eliminate negative scores. With six 20-second periods, the maximum score is 24; and the minimum score obtainable is 0.

During the last minute, while the distracter blocks are present, the goal-directed behavior is scored three points for each 20-second period; and non-goal-directed behavior is scored minus one point for each 20 seconds such behaviors appear. A constant of +9 is added to eliminate negative scores. Thus, with three periods, the maximum score obtainable is 18 (all goal-directed activity); and the minimum score obtainable is 0 (non-goal-directed activity).

APPENDIX D

THE DAY PETER PLANNED

Record Form

Score:

Child's Name________________________ ID#______ Retention______

School__________________ Teacher_______________ Transfer ______

Examiner_________________ Date_______________ Total ______

(Show flannel figures of Peter and Maria when appropriate)

Examiner: Remember the story you heard yesterday about a little boy named Peter? Peter was having a hard time doing something that all his friends could do. Do you remember what Peter had a hard time doing?________________

Right, he (or yes and he also) had a hard time thinking of what he wanted to do in school.

Retention: (1 point for each correct answer)

1. Here is Maria. What did Maria think of doing?__________
2. At home that night, what did Peter think of wearing to school the next day?____________________
3. What did Peter think of doing in school the next day?___ ______________________________________

Transfer: (2 points for each correct answer)

Can you think ahead about what you will do, too?

1. Think now. What will you do when you go back to your room? (or when we finish here?)____________________ ______________________________________
2. Think again. What will you do when you get home from school? ______________________________
3. Can you think of something you will do on Saturday or Sunday? ______________________________

THE DAY PETER PLANNED

Scoring Criteria

Retention: (1 point for each correct answer)

1. Puzzle
2. Blue pants, red shirt
3. Paint

Transfer: (2 points for each correct answer)

1. Room. This response must refer to some specific activity, painting, listening to a record, or playing with some specific materials (blocks, puzzles, clay) rather than just "playing toys."
2. Home. This response must be different from a school activity. If it sounds similar (play with blocks, puzzles, dishes), ask if the child has these materials at home. If response is "play with my friends," ask what their names are to determine whether they are school friends only or ask where the friends live. 'To sleep" is an acceptable response for preschoolers, but for kindergarten children, cue by asking what they would do after that.
3. Saturday or Sunday. This response must have reasonable connection to a weekend, such as go to the beach, go to church, go shopping, go to a movie, clean the yard, watch TV, etc.

APPENDIX E

CARROT SEED

Record Form

ID#__________ Child's Name____

School__________________________ Examiner__________________________

Date__________________________ Score: Part I _______

Part II _______

Part III _______

Total _______

"Remember the story we heard yesterday about a little boy who wanted to do something and no one thought he could? On each page, I'm going to show you some pictures and I want you to point to the picture that tells what happened in the story."

Part I--Recognition

1. A B
2. A B
3. A B
4. A B
5. A B C D E
6. A B C D
7. A B C
8. A B
9. A B

Part II--Application

1. What did the little boy want to do? (If child doesn't answer, say, "He wanted to grow a carrot."--no credit given)

____

____

2. What steps did he need to grow his carrot?

____

____

3. Why did the carrot grow?

____

____

Part III--Transfer

What's something you've done and really worked on? (If no response, then say, "Think of something in school you've done.") What were the steps you took?

____

____

CARROT SEED

Questions on Recognition to be Used with Pictures

1. WHAT DID THE LITTLE BOY IN THE STORY DO?
   a. Did he plant a seed or
   b. play in the sand?

2. WHAT ELSE DID THE LITTLE BOY DO?
   a. Did he play in the sand or
   b. pull the weeds?

3. WHAT DID THE LITTLE BOY DO?
   a. Did he make a pile of sand or
   b. did he water?

4. WHAT ELSE DID THE LITTLE BOY DO?
   a. Did he grow a plant or
   b. build a sand castle?

5. WHAT DID HE WANT TO GROW?
   a. apple
   b. pear
   c. carrot
   d. celery
   e. eggplant

6. WHO MADE THE CARROT GROW?
   a. father
   b. little boy
   c. big brother
   d. mother

7. WHAT DID THE CARROT LOOK LIKE?
   a. small
   b. medium
   c. big

8. HOW DID HE FEEL WHEN IT DID NOT COME UP?
   a. Happy or
   b. sad?

9. HOW DID HE FEEL WHEN IT DID COME UP?
   a. Happy or
   b. sad?

CARROT SEED

Scoring Key

Max. Pts.

Part I: Recognition (1 point for each correct answer)

1. A
2. B
3. B
4. A
5. C
6. B
7. C
8. B
9. A

9

Part II: Application

1. Anything pertaining to growing a carrot--plant a seed, grow a carrot, plant a carrot, etc. 2

2. Dig a hole (1 pt.)
Put in a seed (1 pt.)
Cover the seed (1 pt.)
or Plant a seed (3 pts.)
Water the seed (1 pt.)
Pull out the weeds (1 pt.)
5

3. Caring for the seed (2 pts.)
Or
Watering the seed (1 pt.)
Pulling out the weeds (1 pt.)
2

Part III: Transfer

1. Naming a task (3 pts.)
Naming a task as well as two steps (6 pts.)
Naming a task as well as more than two steps (9 pts.)
9

(Note: If examiner names a task for the child and the child verbalizes more than two steps for that task, give the child 6 points--9- 3 = 6.)

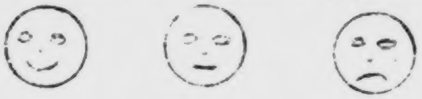
APPENDIX F

INSTRUMENTAL SATISFACTION (INST)

Instructions

Materials

The materials used in this test are colored construction paper cut-outs (squares, triangles, circles, and rectangles) of various sizes, paste or glue, crayon or pencil for marking, and plain white 8" x 11½" paper with three faces at the upper right-hand corner of the paper--a smiling face, a neutral face, and a sad face.



Procedures

This test may be administered to a group of about five children at a time. If so, have each child's working table relatively isolated, with a sufficient amount of materials on each table. Begin by having the children sit in a circle, and say:

HERE ARE SOME COLORED PAPERS OF DIFFERENT SHAPES. (Point) I WANT YOU TO MAKE FIVE PICTURES WITH THEM. AFTER EACH OF YOU GOES TO YOUR TABLE, I WILL TELL YOU WHAT PICTURE TO MAKE FIRST.

SOMETIMES IT'S FUN TO BE ABLE TO TELL YOURSELF HOW YOU DID. THERE ARE THREE FACES AT THE TOP OF EACH PAGE (Point). AFTER YOU FINISH EACH PICTURE, MARK ONE OF THE THREE FACES THAT TELLS HOW YOU FEEL ABOUT YOUR PICTURE.

The order of the five pictures to be made by each child is as follows:

1. table; 2. boat; 3. airplane; 4. house; and 5. car.

Have each child go to his table and begin working on his first picture--a table. Since the children usually work at different rates, after a child completes a picture collect it, making sure that he has marked a face, and inform him of the next picture until all five pictures are done.

To keep the examiner's influence over the children to a minimum, avoid sitting next to or standing over a child. However, as unobtrusively as possible, watch to see that the children have enough supplies and that they mark one of the three faces after completing each of their pictures. If a child marks a face prior to making his picture, give the child a new sheet of paper and re-explain that he is to mark the face that tells how he feels about his picture after he finishes it.

The child's score is the number of "happy" faces he selects, less the number of "sad" faces he selects, plus a constant of five, the number of pictures.

APPENDIX G

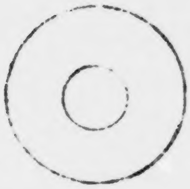
DESIGN EVALUATION

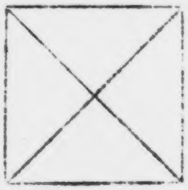
Instructions

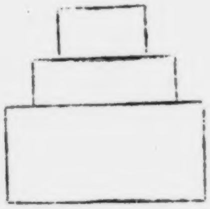
Materials

On one side of a paper 8½" by 5½", draw a design that can be reproduced by a preschool or kindergarten child (External Criteria). Leave enough space so that he can make two similar drawings. Use the blank reverse side of the paper for the second half of the test (Internal Criteria).

Examples of designs for external criteria:







Procedures

1. Evaluation using EXTERNAL CRITERIA

Show the design. MAKE ONE JUST LIKE THIS. Child draws. OKAY, LOOK AT THIS AGAIN (model) AND MAKE ANOTHER ONE JUST LIKE IT RIGHT HERE. (Point to a space near the model.) NOW LOOK AT THIS ONE AGAIN (model) AND THEN LOOK AT EACH OF YOURS. WHICH OF YOURS LOOKS MORE LIKE THIS ONE? (Point to model again.) Indicate choice with a star (*).

WHY DID YOU CHOOSE THIS ONE? Record response next to the design.

Point to the other one the child has drawn and say:

WHY DID YOU NOT CHOOSE THIS ONE? Record response next to the design.

2. Evaluation using INTERNAL CRITERIA

Turn the paper over and say, DRAW A CIRCLE (for preschoolers or the letter B for kindergarten children). After the child draws, say, IS THIS THE WAY YOU WANT IT TO BE OR DO YOU WANT TO MAKE ANOTHER ONE? If the child says that it is the way he wants it, say, OKAY, FINE. Then ask him to draw another shape or letter until he indicates dissatisfaction with his drawing and says he does want to make another.

Before the child goes on to his second drawing, ask,

WHAT DO YOU NOT LIKE ABOUT THIS ONE? Record exact response next to drawing. Include any pointing the child does. (If there is no response, record NR and proceed. GO AHEAD AND MAKE ANOTHER ONE. (Child draws.)

WHICH ONE DO YOU LIKE BETTER? Indicate choice with a star (*).

WHY DO YOU LIKE THIS ONE BETTER? Record exact response next to drawing. Include any reference to previous drawing.

DESIGN EVALUATION

Scoring

Evaluation Using External Criteria - (maximum: 2 points)

Looking at a model, the child draws two likenesses and then compares his drawings to the model. Score 1 point for a general evaluation and 2 points if the evaluation includes reference to something specific, as follows:

A. General response (1 point)
"Good," "better," "nice," "I like 'um," "I make 'um," or "ugly," "no good," "junk," "I no like 'um," etc.

B. Specific response (2 points)
"Straighter," "more round," "crooked," "too skinny," "too big," or a definite reference to any part of the design.

Evaluation Using Internal Criteria - (maximum: 4 points)

Without looking at a model, the child makes a shape or a letter as indicated by the examiner. Score the response to "What do you not like about this one?" as follows:

A. General response (1 point)
"Ugly," "no good," "junk," "small," or "big" (if response is to the whole figure; size is not a relative evaluative quality here), etc.

B. Specific response (2 points)
"It's crooked here," "lines don't come together," "too fat," "too small here," (referring to a definite part of the figure), etc.

After the second drawing, in response to "Why do you like this one better?" score as follows:

A. General response (1 point)
"I make 'um beautiful," "looks good," "It's good," etc.

B. Specific response (2 points)
"It doesn't stick out there now," "the line is straight," "It has a sharp point," etc.

The total score is the combined external and internal criteria scores (maximum: 6 points).

In the evaluation using internal criteria (second half), if the first drawing is rejected with specific deficiencies noted and then the second drawing is evaluated, making direct reference to those deficiencies now corrected (e.g., first drawing: "The line is crooked here; second drawing: "This time the line is straight, or no more crooked"), indicate this by a check mark next to the total score. (6)✓

APPENDIX H

DAY EVALUATION

Instructions

Get the child's full attention. THINK ABOUT SCHOOL YESTERDAY. TELL ME SOMETHING THAT HAPPENED YOU FELT GOOD ABOUT AND SOMETHING YOU DID NOT FEEL GOOD ABOUT. Record response verbatim.

Scoring

General Response: (1 point)

Includes things that happen so routinely that reference to them is probably not specific, e.g., nap time, eating, working, learning, playing, or broad categories like playing with toys, or playing games.

Materials--no experience response: (2 points)

Includes reference to specific materials or people, but does not relate them to any specific experience, e.g., playing with blocks, playing with puzzles, playing with my friends.

Specific experience response: (3 points)

Includes some reference to materials or people, relating to a specific experience, e.g., "I built a house with blocks," "We played a new game" or, negatively, "I hurt someone," "We had to put our heads on the table," "I couldn't find my apron," "The machines were making lots of noise."

APPENDIX I

AUTONOMOUS ACHIEVEMENT MOTIVATION (TAAM)

Instructions

The test of Autonomous Achievement Motivation is comprised of four tasks--a bead reproduction task, in which the child is asked to reproduce a string of beads from memory; a picture memory task, in which the child is asked to recall the pictures on a sheet of paper; a basket-throwing task, in which the child is asked to throw a styrofoam ball into a waste-paper basket from behind lines set at different distances; and a puzzle task, in which the child is asked to complete a puzzle. For all of these tasks, the child is presented with items of increasing difficulty. The child continues with each task until he encounters two consecutive failures after at least one success. (However, for the puzzle task, each child successfully completes the first two puzzles and at least part of the third before he is asked to stop.) After the child has two consecutive failures or is asked to stop, he selects one of four options he would most prefer to repeat; the options are the first item, the last successful item, and the two consecutive failure items.

Prior to administration of the test of Autonomous Achievement Motivation, the children are randomly divided into two groups--an incentive group and a non-incentive group. Although the testing procedure remains identical for each group on all four tasks, the vocabulary differs only when options are presented to the children. Each child in the incentive group is asked, WHICH OF THESE WOULD YOU LIKE TO TRY AGAIN? THIS ONE (first item) WAS EASY FOR YOU TO DO. THIS ONE (last successful item) WAS SLIGHTLY HARDER: BUT YOU

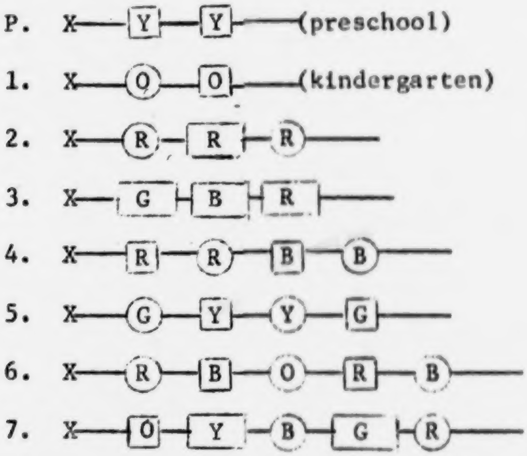
WERE ABLE TO DO IT. (Naturally, this is not said if the child has had just one success.) THIS ONE WAS STILL HARDER FOR YOU TO DO (first consecutive failure) AND THIS ONE WAS THE HARDEST (last failure). POINT TO THE ONE YOU WOULD LIKE TO TRY AGAIN. On the other hand, each child in the non-incentive group is asked, WHICH OF THESE WOULD YOU LIKE TO TRY AGAIN? THIS IS THE FIRST ONE YOU DID AND YOU GOT THIS ONE RIGHT. YOU ALSO GOT THIS ONE (exclude using the word hard, say something descriptive of the item). THIS ONE HAS STILL MORE (beads, pictures, or puzzle pieces) AND YOU ALMOST GOT IT RIGHT: AND THIS ONE HAS THE MOST (beads, pictures, or puzzle pieces).

For the basket-throwing task, each child is asked, FROM WHICH ONE OF THESE LINES WOULD YOU LIKE TO THROW THE BALL AGAIN? While the words easy, hard, harder, and hardest are still used with the children in the incentive group, near, far, farther, and farthest are used with the children in the non-incentive group when the four options--the first success, the last success, and the two consecutive failures--are indicated.

(1) Reproducing Beads from Memory

Materials

Six strings of beads of varying shapes and colors, as below: (Y = yellow, R = red, B = blue, G = green, O = orange).



Procedures

WE'RE GOING TO PLAY A GAME USING THESE BEADS. HERE ARE YOUR BEADS, AND THIS IS YOUR STRING. I'LL SHOW YOU SOMETHING I'VE PUT TOGETHER ALREADY, AND YOU MAKE ONE JUST LIKE IT. LOOK AT IT CAREFULLY BECAUSE I'M GOING TO HIDE IT. THEN WE'LL SEE WHETHER YOURS LOOKS LIKE MINE.

Show item 1, being sure the child's beads (placed in a small box with a string) aren't within his reach.

LOOK AT THIS CAREFULLY. After five seconds hide them behind your back. Show only one string at a time.

NOW MAKE ONE JUST LIKE MINE. Offer the child his assortment of beads and a string.

Wait until the child shows he is through. If there is any doubt, say, TELL ME WHEN YOU'RE FINISHED.

DOES YOURS LOOK JUST LIKE THIS ONE?

Situations that might arise are as follows:

1. If the child says "Yes" to a string that is correct, indicate agreement: YES, IT DOES LOOK JUST LIKE THIS ONE.

2. If the child says "Yes" to a string that is incorrect, show your disagreement: NO, IT'S A LITTLE DIFFERENT BECAUSE . . . .

3. If the child says "No" to a string that is incorrect, say: THAT'S RIGHT. YOUR BEADS DON'T LOOK JUST LIKE THIS ONE BECAUSE . . . .

4. If the child says "No" to a string that is correct, say: YES, YOUR BEADS DO LOOK JUST LIKE THIS ONE. LOOK AT BOTH OF THEM AGAIN.

Note: If the child fails item 1, repeat that item until the child experiences success. Then proceed to item 2 and repeat, if necessary, until the child experiences second success. Continue with the other items without repeating any item upon failure. Stop after two consecutive failures (excluding items(s) one and/or two).

After completing item 1, have the child remove the beads from his string, placing them into his container. Then get the string of beads for item 2 and say:

ALL RIGHT, LET'S TRY THIS ONE.

Every time the child is successful, go to the next bead design. After the child has two consecutive failures, show him the first item, the last success, the last two consecutive failures. Note: A child may have only one success on the first item and two failures. He would then be shown three items instead of four.

Then say:

OKAY, LET'S MAKE ONE MORE STRING OF BEADS. WHICH OF THESE WOULD YOU LIKE TO TRY AGAIN?

After the child makes a choice, show the chosen bead design to the child for five seconds and then hide it. When the child is finished, regardless of the correctness of his design, cheerily say:

THAT'S FINE (without comparing the beads). NOW LET'S PUT THE BEADS AWAY AND LOOK AT SOME PICTURES.

(2) Picture Memory Task

Materials

For this task, use seven sheets of paper with two, three, four, five, six, seven, and eight pictures of objects pasted on them. Objects should be readily identifiable to all children.

Procedures

NOW LET'S PLAY A DIFFERENT GAME. ON THE OTHER SIDE OF EACH PAPER, THERE ARE PICTURES OF DIFFERENT THINGS. WHEN I TURN THE PAPER OVER, LOOK AT THE PICTURES CAREFULLY BECAUSE SOON I AM GOING TO HIDE THE PICTURES AND ASK YOU WHAT PICTURES YOU SAW. LET'S LOOK AT THIS PAPER FIRST.

Point to the pictures individually on the paper and say: .

THIS IS A . . . . Let the child finish the sentence. If he hesitates, supply a name. After he has named all the objects, say:

LOOK AT THE PICTURES CAREFULLY BECAUSE SOON I'M GOING TO HIDE THEM. After five seconds, do so.

NOW TELL ME WHAT PICTURES YOU SAW. Let the child have ample time to finish. When he is through, turn the paper over for the child's evaluation and ask: DID YOU NAME ALL OF THE PICTURES? Agree or disagree as on Task 1.

Note: If the child seems to be struggling, say comfortingly, IT'S HARD TO REMEMBER, HUH? Then turn the card over for the child to name the pictures he failed to mention.

Then cheerfully say: OKAY, NOW LET'S TRY ANOTHER ONE, etc.

After two consecutive failures, show the child the first item, the last success, and the last two consecutive failures. Then say:

WHICH ONE OF THESE WOULD YOU LIKE TO TRY AGAIN?

After the child chooses, let him try as before.

(3) Basket-Throwing

Materials

The objects used in this task are a ball (about the size of a softball, but very light), masking tape, and a waste-paper basket.

Procedures

THE NEXT THING WE'LL DO IS SOMETHING THAT MANY CHILDREN IN SCHOOL LIKE TO PLAY. YOU ARE TO THROW THIS BALL INTO THE BASKET FROM BEHIND THESE LINES. LET'S START HERE. Bring the child to the first line with his toes behind it. For younger children, start almost on top of the basket so that they experience at least two successes.

NOW TRY TO THROW THE BALL INTO THE BASKET. When the child succeeds, while pointing to the second line, say:

NOW STAND OVER HERE AND TRY TO THROW THE BALL INTO THE BASKET. After the child has two consecutive failures, take him aside from the lines and say:

NOW STAND OVER HERE. LET'S THROW THE BALL ONCE MORE. YOU MAY TRY FROM BEHIND ANY ONE OF THESE LINES. FROM WHICH ONE OF THESE LINES WOULD YOU LIKE TO TRY AGAIN?

After the child chooses, let him try again.

(4) Puzzles

Materials

Four identical puzzles with increasing number of pieces are used. The first with ten large pieces (comprised of smaller ones glued together), the fourth with 25 pieces (all separate). The numbers of pieces in the four puzzles are 10, 15, 20, and 25.*

Procedures

I HAVE SEVERAL PUZZLES HERE. THIS IS THE FIRST PUZZLE I WANT YOU TO PUT TOGETHER. IT HAS LARGE PIECES. LOOK AT IT FIRST AND THEN WE WILL DUMP THE PIECES ON THE TABLE.

Show the child the first puzzle in its completed form for about three seconds, then overturn it on the table letting the pieces fall randomly in a pile. Turn the pieces face up and distribute those that interlock, then say:

GO AHEAD NOW.

When he finishes the first puzzle, say:

ALL RIGHT. HERE'S ANOTHER PUZZLE. IT'S JUST THE SAME AS THE FIRST ONE, BUT IT HAS MORE PIECES.

Give each child the chance to complete the first and second puzzles, then present the third one and say: HERE'S ONE MORE PUZZLE. IT'S JUST THE SAME AGAIN BUT IT HAS STILL MORE PIECES. YOU MAY GO AHEAD AND PUT IT TOGETHER. Start to time him. After the child works on this third puzzle for three minutes or when he completes one-half of it (whichever comes first), stop him and say: ALL RIGHT. YOU MAY EITHER FINISH THIS ONE (point to third) OR DO ONE OF THESE (point to first and second) AGAIN. WHICH ONE WOULD YOU LIKE TO WORK ON?

---

*Each child does three puzzles. The preschool children do puzzles 1, 2, and 3 and the kindergarten children 2, 3, and 4.

AUTONOMOUS ACHIEVEMENT MOTIVATION

Record Form

ID#_________ NAME________________________________ DATE_________

School________________________ Teacher______________________

Instructions

1. For each item, mark plus or minus.
2. For each test, circle choice made by child.

A. Reproducing Beads from Memory

P. _____
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

B. Picture Memory (circle or underline child's responses)

1. _____ (two) car, dog
2. _____ (three) chicken, bed, flower
3. _____ (four) phone, cake, monkey, door
4. _____ (five) swing, fish, spoon, tree, baby
5. _____ (six) candle, turtle, snake, shoe, bat, bear
6. _____ (seven) ice cream cone, bell, lamp, toaster, clown, lock, fan
7. _____ (eight)
8. _____ (nine)

C. Basket-Throwing

1. _____ 5. _____
2. _____ 6. _____
3. _____ 7. _____
4. _____

D. Puzzles (record time on each puzzle)

1. _____ _____'_____"
2. _____ _____'_____"
3. _____ _____'_____"
4. _____ _____'_____"

AUTONOMOUS ACHIEVEMENT MOTIVATION

Scoring

On each of the four tasks on Autonomous Achievement Motivation, a plus is given for a correct response and a minus for an incorrect response. Two consecutive failures terminate a task.

In the scoring of each of the four tasks, the item selected by the child to repeat determines his score. Each task is given one score ranging from zero to three points. The criteria for scoring are as follows:

3 points--if the child chooses the first consecutive failure item following two or more pluses that may be interspaced with non-consecutive minuses.

+ + ⊖ -
+ - + ⊖ -
+ + - + ⊖ -
+ - + - + ⊖ -

2 points--if the child chooses the last success item following at least two pluses and one minus.

+ + - ⊕ - -
+ + - + - ⊕ - -

1 point--if the child chooses one of the following:

(a) the first consecutive failure item following one plus only; (b) the last success item following two or more pluses and no minuses; (c) the last success item following a plus and a minus.

+ ⊖ -
+ + ⊕ - -
+ + + ⊕ - -
+ - ⊕ - -

0 point--if the child chooses one of the following:

(a) the last consecutive failure item; (b) the first success item; (c) the last success item following only one plus.

+ - + - ⊖
+ + - ⊖
+ + + - ⊖
+ ⊕ - -
⊕ + - -

May, 1970

APPENDIX J

MOTIVATION RATING SCALE

Record Form

Dorothy C. Adkins, University of Hawaii
Bonnie L. Ballif, Fordham University

Child's ID#________________ School________________ Type________

Name________________ Teacher________________ Date________

Instructions: Indicate how the child behaves by making a check mark in one of the spaces under the categories A, B, C, and D. Keep in mind that in every class some children are less highly motivated than others. Hence your ratings for different children should differ considerably.

	Very much like	Some-what like	Very little like	Not at all like
	A	B	C	D
1. Is enthusiastic about school	4	3	2	1
2. Soon stops trying a difficult task .	1	2	3	4
3. Acts as if he will succeed	4	3	2	1
4. Forgets what is expected of him . .	1	2	3	4
5. Pays little attention to stories . .	1	2	3	4
6. Asks reasons for things	4	3	2	1
7. Persists toward a goal	4	3	2	1
8. Emphasizes amount of work rather than quality	1	2	3	4
9. Tries to help the teacher	4	3	2	1
10. Is willing to work for a later reward	4	3	2	1
11. Tries to excel	4	3	2	1
12. Applies high standards in what he does	4	3	2	1
13. Is always wanting to do something .	4	3	2	1
14. Lacks confidence in own ability . .	1	2	3	4
15. Likes to make things	4	3	2	1

Scoring:

Each item is given one score as designated above.
Total score is the sum of the 15 items.

June, 1972

APPENDIX K

TEACHER RATING SCALE FOR MOTIVATION TO ACHIEVE IN SCHOOL

Record Form

Teacher's Name________________________ School___________________ Date________

	Lo			Hi
UNIT I--AFFECTIVE RESPONSES	1	2	3	4
1. Is concerned about each child's well-being				
2. Sets firm, consistent limits on behavior				
3. Does little things to help the children feel good				
4. Creates opportunities for pleasurable situations				
5. Is sensitive to each child's personal interests				
6. Helps children verbalize their feelings				
7. Reinforces a child's attempt to describe feelings of pleasure				
8. Demonstrates her own enthusiasm for school				
9. Draws a child's obvious enjoyment of school to attention of the class				
Subtotal				

TOTAL________

UNIT II--CONCEPTUAL RESPONSES	1	2	3	4
1. Listens attentively and responds when a child talks to her				
2. Gives each child responsibility				
3. Elicits individual responses (in a group situation)				
4. Gives opportunity for children to make choices				
5. Initiates quiet conversation with a child				
6. Lets a child see himself as an achiever (take work home, show to the group, etc.)				
7. Reinforces the learning process by using such phrases as "paying attention," "listening," "trying hard," "sticking to it," "working by yourself," "following directions"				
8. Reinforces accomplishments				
9. Models achieving behavior herself				
Subtotal				

TOTAL________

UNIT III--PURPOSIVE RESPONSES	1	2	3	4
1. Models planning (long- & short-range) herself				
2. Provides opportunities for the children to plan ahead				
3. Verbalizes the planning as she sees it occur				
4. Reinforces planning behavior when a child follows through				
5. Help a child to be realistic about a task (too easy or too hard)				
Subtotal				

TOTAL ______

UNIT IV--INSTRUMENTAL RESPONSES	1	2	3	4
1. Models and verbalizes taking steps				
2. Asks questions to help a child verbalize steps				
3. Identifies and reinforces specific steps as they occur				
4. Reinforces "steps to learning": listening, paying attention, asking questions, trying hard, following directions, etc.				
Subtotal				

TOTAL ______

UNIT V--EVALUATIVE RESPONSES	1	2	3	4
1. Models process of evaluating what she herself does				
2. Elicits the question "Is this the way I(we) want it to be?				
3. Reinforces any instance of a child's evaluating.				
Subtotal				

TOTAL ______

Scoring:

The total for each unit is the sum of the subtotals; the total for the Teacher Rating Scale is the sum of the five unit total scores.

APPENDIX L

EXPERIENCES DESIGNED TO INCREASE PRESCHOOL CHILDREN'S SCHOOL ENJOYMENT AND SELF-CONFIDENCE IN ABILITY TO LEARN IN SCHOOL

Modified from reports to the University of Hawaii Center for Research in Early Childhood Education prepared under a subcontract with Fordham University by Bonnie L. Ballif and Valerie Crane.

Both theoretical and empirical evidence concur that expectations of increased positive affect from learning and confidence in one's ability to learn in school are essential although not sufficient for behavior from which motivation to achieve can be inferred (Adkins & Ballif, 1970).

Providing opportunities for associations to be made between affect and cues or between conceptualizations of self and cues is difficult, due to the multitude and complexity of stimuli involved and problems in arriving at adequate operational definitions of the responses in question. Apparently, however, principles of learning involved in increasing the probability of occurrence of expectations of positive affect and of self-confidence are the same as those involved in increasing the probability of occurrence of observable responses. Indeed, these same principles of learning have been used in designing experiences to modify a variety of covert responses in children, including expectations of positive affect from achieving in learning in school and self-confidence in ability to learn in school.

Essential conditions for increasing probability of occurrence of expectations of increased positive affect or of self-confidence require, first, that the child have opportunity to observe a model who provides visual and verbal structures of the response by demonstrations and verbalizations; second, the child must be given opportunity to actually experience the desired outcomes, beginning at a level of difficulty appropriate for him and progressing along a continuum of assumed difficulty; and, third, the child must be reinforced for each successive approximation he makes to the desired response. Each of the "experiences" presented includes suggestions for the instructor in modeling, eliciting, and reinforcing the desired types of behavior. Such specific experiences are intended only as examples of the many interactions the child may have with his teacher.

The detailed experiences that follow, designed to increase a preschool child's school enjoyment, are those used in the work with four children described in the text of this report. The experiences planned to increase a child's confidence in his ability to learn in school followed the same general outline and in large part used the same materials and procedures, but with emphasis throughout on confidence in one's ability to achieve in school rather than development of positive affect toward school. In view of the close similarity of the contexts of the two sets of experiences, only one is presented here.

Experience 1: Doll Play

Purpose

The purpose of this experience is to elicit expectations of affect toward school in fantasy.

Materials

Diorama of a classroom made out of a cardboard box. Shelves drawn in around the walls of the classroom with a variety of school objects and equipment drawn in on the shelves. Paper stick figures of a teacher, two boys, two girls, and a table.

The following stories of positive affect toward school (stories one, two, and three), learning (stories four and five), and achieving (stories six and seven.)

Story one. I am going to choose the teacher and this boy. His name is Andy. He is coming to school. He is very happy. He can't wait to get there. He goes over to the coat rack. His teacher stands by the door. He hangs up his coat. He goes over to the shelf because he wants to play with the train. He takes the train over to his seat and plays with it.

Story two. This time I am going to choose the little boy and the little girl. Their names are Andy and Dolly. I am going to have them walk over holding hands to the shelves. They are going to take the numbers and go over to the tables. They are going to sit down and play with the numbers. They love to play with the numbers. They are going to sort them out by ones, twos, threes, fours, etc. They play with them all morning and then put them away.

Story three. I am going to choose a girl and a boy. The teacher is going to stand over here. They are going to the shelves to get the farm and pick out something to do. They want to work in the farm. They like to take the animals and put them around in the barn. They put the cows over here and the sheep over here together. They have a lot of fun with the farm. When they are done, they put the animals and barn away.

Story four. I am going to have two boys and a girl work with the letters. They take the letters out of the box and match them with the words on the cards. When they have trouble with a word, they help each other. They like to work with letters. They are having a lot of fun. They also like to learn about the letters.

Story five. I am going to take two girls. They are going to paint today because they like to paint. They also like to show things that they have learned, so they are going to paint numbers on a piece of paper to show the teacher. They are very proud of their numbers. They paint a one, a two, a three, a four, and a five on the paper. When they are done, they go to show the teacher that they have learned the numbers. They are happy.

Story six. These two children (a boy and a girl) are going to play with the blocks which are over there on the shelf. They are going to take them over to the table and then they are going to tell each other which block is a cube, a pyramid, etc. They really like to work with blocks. They feel good when they can tell each other what the different blocks are. They also like to learn the blocks they don't know.

Story seven. I am going to take one boy and one girl this time. I am going to have them walk over to the bookshelf and choose some books to look at. They like to look at books. They look at the picture and the words. They feel very good when they learn something new like a new word. These children love books. They love to work with books.

Procedure

The instructor points out to the child that the diorama represents a classroom with a teacher and some children. She tells the child that they will take turns telling stories about these children and the teacher in the classroom.

Modeling positive affect toward school. The instructor tells one of the stories provided, selecting it by matching the type of affect expressed in the story to that being exhibited by the child. She tells the child how good she feels when she tells a story about children who like school. She then lets the child choose some figures and tell a story. This procedure is repeated so that both the model and the child have an opportunity to tell several stories.

Eliciting positive affect toward school. If the child is reluctant to tell a story, the instructor asks probing questions such as, "Which doll do you want in your story?" and "What do you want to do in school?" If affective responses are not produced readily by the children, the instructor probes with questions such as, "Did you have fun doing that?" and "Does your little boy like school?" It may even be necessary at times for the instructor to say, "I think this little boy likes school," and then help the child to repeat that sentence.

Reinforcing positive affect toward school. The instructor reinforces the child with verbal approval each time he indicates that someone in his story enjoys some aspect of school. She always explicitly states why the child is being reinforced, i.e., because he told a story about a child who liked to go to school and learn well.

Experience 2: Pictures of Things I Like To Do in School

Purpose

The purpose of this experience is to associate positive affect with a variety of school activities.

Materials

Paper, pencils, markers, and crayons, as well as items from the classroom, such as books, numbers, and blocks.

Procedure

The instructor tells the child that they are going to draw pictures of different things to do in school that they think are fun. She might describe some things she likes and brought along to draw.

Modeling positive affect toward school. First, the instructor chooses an object or describes an activity that she likes to do in school and then draws a picture of it. She tells the child she is proud of herself for drawing a picture of something she likes to do in school and then asks the child to draw a picture of something he likes to do in school. This procedure is repeated several times.

Eliciting positive affect toward school. The instructor asks the child what he likes to do in school. If the child has difficulty, she suggests various activities and asks the child to think about how he likes them. She then asks him to draw a picture of the things he likes to do. If the child says that he can't draw something, she helps him to draw the picture.

Reinforcing positive affect toward school. The child is praised and reinforced for each response that indicates positive affect toward school activities. The reinforcement is contingent upon the positive affect that is associated with the activity and not merely with the picture that the child has drawn. After the child has drawn several activities he likes, the instructor might tell the child that he can do something he likes to do because he has done such a good job of naming and drawing things he liked to do in school. The child should then be encouraged to choose and do something he enjoys.

Experience 3: Will Luffins Like School?

Purpose

The purpose of this experience is to elicit from the child verbalization of his positive affect toward school.

Materials

Script. "Will Luffins Like School?" (Adkins & Ballif, 1971, pp. 10-11), which is told by the instructor using a frog-like hand puppet named Luffins.

Procedure

The instructor follows the script.

Modeling positive affect toward school. At the appropriate time indicated in the script, the instructor tells Luffins about all of the things she likes in school. Each time the instructor describes something she likes, Luffins perks up and nods his head. Then the instructor says she is glad that she could think of "fun" things for Luffins to do in school. After she makes a suggestion, the instructor asks the child to think of some activities that he likes and that would help Luffins to like school.

Eliciting positive affect toward school. If the child does not readily describe the things he likes to do and in so doing suggest things that will be fun for Luffins to do in school, the instructor asks specific questions, e.g., "What did you do today in school that was fun?" or "Did you have fun working with blocks?"

Reinforcing positive affect toward school. The instructor praises the child for each description of things he likes to do in school. The excitement of Luffins should also be evident for each suggestion of something that will help Luffins to like school. The child is encouraged to verbalize how good he feels for suggesting things he likes to do in school.

Experience 4: School Game

Purpose

The purpose of this experience is to associate positive affect with school and learning activities.

Materials

Dice and cards with pictures of school activities on them. The back of each card is numbered with dots in the same position as those found on one side of a die. The set of cards includes numbers corresponding to all sides of a die.

The pictures on the cards depict the following: scissors and paper, cards with words on them, a painting easel, shapes, numbers with counters, a note to mother that says, "I like school," letters, a pencil and paper, numbers, a note to teacher that says, "I like school," blocks, a book, and names of friends.

Procedure

The instructor introduces the game to the child by showing him the dots on the cards, the pictures on the cards, and the dice. The child is allowed to become familiar with the dice and how they are used. The instructor also shows the child how to match a number of dots on the die to a number of dots on the card. The instructor then places the cards in piles according to their numbers of dots with the dot sides facing up.

The instructor then rolls one die, counts the number of dots on the die when it stops, and then finds a card with the same number of dots. The instructor verbalizes what she is doing as she goes along. After she finds the card with the correct number of dots, she turns the card over and describes the picture on the card. If the picture is of something the instructor likes, she keeps the card; if the picture is of something the instructor does not like, she puts the card back on its pile. The instructor then explains to the child that they will each take turns until all of the cards are gone.

Modeling positive affect toward school and learning activities. Each time it is the instructor's turn to take a card, she describes the picture and expresses her positive affect toward the situation depicted, e.g., "This is a picture of a book. I like books, so I get to keep this card." Intermittently, the instructor tells the child she is proud of herself for liking so many things in school and getting so many cards for thinking that activities in school are fun.

Eliciting positive affect toward school and learning activities. When the child takes his turn, the instructor may need to help him count the number of dots on the die and on the card. She also turns over the card and helps the child describe the picture there. She may need to ask the child, "Do you like to look at books?" If he says "yes," he is allowed to keep the card.

Reinforcing positive affect toward school and learning activities. Each time the child takes his turn and expresses any indication of enjoying school and learning, he is verbally reinforced by the instructor. In addition, the keeping of the card acts as an immediate reinforcer. At the conclusion of the game, the cards are counted and the instructor reinforces the child again for having liked so many things in school.

Experience 5: Working With Numbers

Purpose

The purpose of this experience is to associate positive affect with a specific academic task taken from the classroom.

Materials

Numbers 1 through 10 painted on square pieces of wood and a box of counters. Materials used in another academic area may also be selected for use.

Procedure

The instructor draws the attention of the child to the numbers in the box and suggests that they put the numbers out in order on the table. Then she points out that these numbers came from the child's classroom and that he already may have seen them, played with them, or worked with them. The instructor then shows the child how the counters should be placed under each number and both instructor and child take turns doing so.

Modeling positive affect toward a specific academic activity. As the instructor selects the counters and places them under the correct number, she verbalizes positive affective responses such as, "I really like to work with numbers. I like to put the right number of counters under each number. I had fun doing that." When the instructor has placed the counters under the numbers, she indicates how happy she is with herself for liking to work with numbers.

Eliciting positive affect toward a specific academic activity. If the child does not know how to count out the correct number of counters, then the instructor helps the child. Also, if he does not verbally associate positive affect with working with numbers, the instructor elicits that response by asking questions, such as "Don't you like to work with numbers?" and "Isn't it fun to play with these numbers?"

Reinforcing positive affect toward a specific academic activity. It is important for the instructor to reinforce the child with praise after each response that indicates positive affect toward working with the numbers. Then, after the instructor and the child have alternated and filled in all the counters, the child is praised for liking to work with numbers.

Experience 6: Choosing Friends

Purpose

The purpose of this experience is to associate positive affect toward school with friends in school.

Materials

A variety of photographs (8" x 10") of children doing things in school, some exhibiting positive affect and others negative affect toward school. A short story accompanies each picture and describes the respective affect of the children.

Picture one. Description: The teacher is reading to the class. Story: These children are listening to the teacher read. They like to read in school. These other children are not listening to the teacher. They don't like stories.

Picture two. Description: A boy is sitting on the floor doing nothing. A black boy is rolling up a mat. Story: This boy is sitting on the floor doing nothing. He doesn't like to help out in school. This boy is rolling up the mat. He is happy to help out in school. He likes school.

Picture three. Description: A boy is drawing. A girl is not drawing. Story: This girl is supposed to draw a picture. She doesn't want to. She doesn't like to draw. She just sits there. This little boy loves to draw. He starts a picture of his own. He is having fun. He likes to draw in school.

Picture four. Description: Four boys are around a table. One is sweeping, one is picking up mats, one is holding a tray, and one is doing nothing. Story: This boy is busy picking up the mats. He is having fun. This boy is just sitting there. He won't help.

Picture five. Description: One boy is doing nothing. Another boy is doing number sticks. Story: This boy is working with the number sticks. He thinks it is fun to learn how to count. This boy is just sitting in his chair looking at the other boy.

Procedure

The instructor shows the first picture to the child and tells him that she has a set of pictures showing children like himself doing different things in school. The instructor then says that she knows some stories about the different children in the picture and that she is going to tell a story and ask the child which of the children he wants as his friend. The instructor tells the child that they will take turns choosing friends.

Modeling positive affect toward children who like school. The instructor tells the story for picture one and then chooses as friends the children who are listening to the teacher read because they like school. The instructor then reinforces herself, e.g., she says, "I am happy I chose friends who like school."

Eliciting positive affect toward children who like school. The instructor then tells the story for picture two and lets the child choose friends. She asks the child why he chose the friends he did and helps him to verbalize that it was because they like school.

Reinforcing positive affect toward children who like school. The instructor praises the child each time he chooses a friend who likes to do things in school. The instructor also reinforces the child for stating that his friends are children who like school.

Experience 7: Peter and Maria

Purpose

The purpose of this experience is to help the child expect that he will enjoy being in school and learning in school.

Materials

Four stories (Adkins & Ballif, 1971, pp. 13-16) indicating that Peter and Maria like being in school and learning in school are used as well as paper and crayons.

Procedure

The instructor tells the first story and draws pictures illustrating it as she goes along. She then begins to tell the second story but periodically asks the child to help her by using questions designed to elicit the child's awareness of expectations of positive affect from being in school and learning in school. For the third and fourth stories, the instructor continues to involve the child with questions.

Modeling expectations of positive affect toward school and toward learning. As the instructor tells the stories, she emphasizes the expectations of enjoyment Peter and Maria have for school and learning new things in school, as well as her own expectations of positive affect from being in and learning in school.

Eliciting expectations of positive affect toward school and toward learning. As the instructor tells the second, third, and fourth stories, she periodically asks the child about Peter and Maria and what they think about school. She may need to ask questions, such as "How did they feel about going to school?" or "How did they think they would feel when they got to school?" The questions are used to elicit awareness of expecting positive affect from school and from learning. If the child does not readily give these responses, the instructor asks questions that are appropriate to the child's level of understanding.

Reinforcing expectations of positive affect toward school and toward learning. Each time the child verbalizes that Peter and Maria expected school and learning to be enjoyable, the instructor verbally reinforces the child. For example, the instructor might say, "I am glad that you see that Peter and Maria think school will be fun," or "I am proud of you because you know that Peter and Maria will like learning in school."

Experience 8: Luffins Likes to Learn

Purpose

The purpose of this experience is to associate positive affect with academic learning in school.

Materials

A frog-like hand puppet named Luffins, crayons, and paper.

Procedure

The instructor reminds the child that Luffins visited once before when he had been worried about liking school but that the child had convinced him that school would be fun. She then tells the child that Luffins now wants to know about some things he might have fun doing in school.

Modeling positive affect toward academic learning in school. The instructor says to the puppet that she knows something she likes to do in school, she likes learning how to count, and that it makes her happy to know she likes to learn new numbers.

Eliciting positive affect toward academic learning in school. The child is encouraged by the instructor to make suggestions of different things he likes to learn in school. The instructor emphasizes academic learning and not just any activity such as playing games or having parties in school. The children might want to show Luffins that he can learn to write by helping him to hold a crayon and make a letter.

Reinforcing positive affect toward academic learning in school. The instructor verbally reinforces the child each time he says that academic learning in school is fun and also perks Luffins up and has him nod or jump up and down enthusiastically in order to reinforce the child for having such a good idea.

Experience 9: Dice Game

Purpose

The purpose of this experience is to associate positive and negative affect appropriately with a variety of activities in the classroom.

Materials

This game consists of 12 cards, eleven of which have different activities written on them, e.g., to listen to a story the teacher reads, to walk away from my work, to forget to do my number work, to do my work well, to work with the blocks, to throw books on the floor, to learn to count to five, to learn something new, and to learn to write my name. On the back of each card is a happy face or a sad face depending on whether the activity should make one happy or sad. The cards are arranged in a square like a Monopoly board. Some objects are used as "men" who move around the board and are initially placed on the first square used as a starter.

Procedure

The instructor puts the cards out on a table or on the floor and explains the game to the child. On each of the cards are descriptions of different activities in school. Some of the activities make one sad and some make one happy. If there is a possibility that the child might not understand, the instructor reads a card and says to him, "'To walk away from my work.' Does that make you happy or sad?" After the child answers, the instructor turns the card over and shows the happy or the sad face. If the answer of the child is the same as the picture on the card, the child is allowed to keep the card. Then the instructor explains to the child that he has a little man who will move around the board in steps. The number of steps the man takes depends upon how many dots show up on the die. The card the little man stops on is the one that is read and turned over.

Modeling positive or negative affect toward activities in school. The instructor takes the first turn in the game and verbalizes each step while the child watches and listens. She throws a die, counts the dots on the die, moves her man step by step around the board, reads the activity on the card, verbalizes positive or negative affect toward that activity, and then turns over the card to see whether the face on the back of the card is happy or sad. The instructor then says, "I get to keep this card because it makes me happy/sad to _______. I am glad I like/don't like to ________."

Eliciting positive or negative affect toward activities in school. As the child takes his turn in the game, the instructor helps with any step he has difficulty with. When he lands his man on the correct card, the instructor reads the activity on the card and asks him if it makes him happy or sad.

Reinforcing positive or negative affect toward activities in school. When the child answers correctly, the instructor reinforces him by praising him, showing him the happy or sad face on the card, and giving him the card. If he is wrong, the instructor points out the error, rereads the card, and helps him provide the correct response so that he can be appropriately reinforced.

Experience 10: Cylinder Blocks

Purpose

The purpose of this experience is to associate positive affect with performing an academic task well.

Materials

A solid block of wood with ten solid cylinders which fit into holes along the board. The solid cylinders increase in width as they decrease in height.

Procedure

The instructor draws the child's attention to the solid blocks and asks if he has seen them in his classroom. If he hasn't seen them before, she might briefly explain that the board is used by removing the blocks from the board and then replacing them in the correct hole. Two procedures can be utilized as games: first, the instructor can take all of the blocks out, keeping them in order, and then putting them back in order; and second, she can take them out, mix them up, and then return them to their correct holes.

Modeling positive affect for achieving in an academic task. The instructor begins to work with the board by saying, "I like to work with the cylinder blocks. I really like to do a good job of getting the blocks back in the appropriate holes." Then she proceeds to remove the blocks and replace them. As she fits each block in, she praises herself, saying, "I am happy that I did that well. I got the blocks in the right holes. It makes me happy to know that I can fit the next block in too. This is fun."

Eliciting positive affect for achieving in an academic task. The instructor then asks the child if he can do the same thing she just did. Before he begins to work, she elicits expectations of positive affect for performing well by asking him, "How will you feel when you do this well?" and "How does it make you feel?" As the child goes along, the instructor continues to elicit positive affect from the child in association with performing the task well.

Reinforcing positive affect for achieving in an academic task. The instructor praises the child each time he verbalizes that he likes to do well in school and specifically in relationship to this task. When the game begins, the instructor says, "I am proud of you because you like to do well in school." After the child has fitted all of the blocks in the correct holes, she reinforces him for doing well and also for being happy that he did a good job.

Experience 11: Picture Stories

Purpose

The purpose of this experience is to associate negative affect with not working at learning in school and positive affect with working at learning in school.

Materials

Five sets of 8" x 10" pictures each consisting of two pictures of the same child, one working and one not working at an academic task.

Set one. The first picture is of a teacher working with cylinder blocks and a girl looking at a friend. The second picture is of the same girl and a boy drawing. The accompanying story follows:

This girl is just sitting doing nothing. It doesn't make her happy. Today, she decides she wants to work in school, and sure enough, she is very happy working with this boy.

Set two. The first picture is of a boy sitting on the floor and a black boy rolling a mat. The second picture shows the same boy sitting in a circle of children all holding letters.

Set three. The first picture is of four boys around a table cleaning up and one boy doing nothing. The second picture is of the same boy sitting down and reading a book. The accompanying story follows:

This boy is doing nothing. He is not having fun. He decides to go to the book corner. He picks out a book. Now he is happy because he is doing something in school.

Set four. The first picture is of a boy looking bored and a teacher working with number sticks. The second picture is of two boys, one doing nothing and the original boy working with number sticks.

Set five. The first picture is of a boy standing up passing paper to children in groups around a table. The second picture is of the same boy sitting at a table and drawing.

Procedure

The instructor shows the child the first set of pictures and tells the accompanying story. The child then is shown the second set and encouraged to tell his story. The model then presents set three and the accompanying story, and the child provides the story for set four and for set five.

Modeling positive affect toward working at learning in school. During the first and third stories, the instructor emphasizes the association of positive affect with working at learning in school and negative affect with not working. She verbalizes self-reinforcing statements, such as "I feel good that I told a story about one who was happy when he was working at learning in school."

Eliciting positive affect toward working at learning in school. As the child tells his stories, the instructor elicits responses describing affect in working at learning situations with probing questions, such as "Is he happy not working in school?" and "Is he happy when he decides it is fun to work in school?"

Reinforcing positive affect toward working at learning in school. Each time the child acknowledges in his story that it is fun to work at learning in school and not fun to do nothing in school, he is verbally reinforced by the instructor. When he finishes his story, she praises him for telling a good story about children who decided it would be fun to work at learning in school.

Experience 12: Working with Letters

Purpose

The purpose of this experience is to provide expectations and experiences of positive affect from performing an academic task.

Materials

Index cards with the names of the child and the instructor on them and a box of letters.

Procedure

In this activity, the child and the instructor match letters in the box with the letters in their names. Younger children who do not know the letters very well will need help in selecting the letters. If the child is particularly slow, the instructor moves the letters almost into place for the child so that he can easily see the similarity between the letter on the card and the letter from the box. The child is given all the help he needs in order to match the letters to his name. The purpose is to associate positive affect with working with letters, not to test whether or not the child can learn or already knows all the letters.

Modeling expectations and experiences of positive affect from performing an academic task. The instructor first matches the letters in her own name by selecting the appropriate ones from the box and placing them beneath those on the card. As she begins she says, "I know it will be fun to work with letters. I like to learn new things about letters." As she finishes each letter, she again provides positive affective responses. When her name is completed, she praises herself for having fun with working with letters.

Eliciting expectations and experiences of positive affect from performing an academic task. If the child has difficulty with the letters, then the instructor helps the child select them and move them into place. The instructor asks the child questions in order to elicit expectations of positive affect if the child does not volunteer those responses. The questions might be, "Do you think you will like to work with letters?" and "Isn't it fun to learn about these letters in your name?"

Reinforcing expectations and experiences of positive affect from performing an academic task. Each expectation of positive affect from the child, as well as each indication of positive affect from working with letters in school, is verbally reinforced by the instructor.

Experience 13: Selecting Picture Cards

Purpose

The purpose of this experience is to identify with friends who are happy because they work in school rather than with children who are unhappy because they do not work in school.

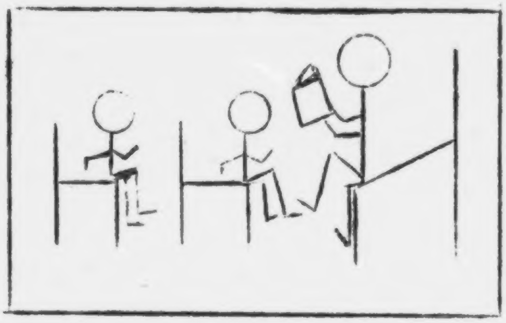
Materials

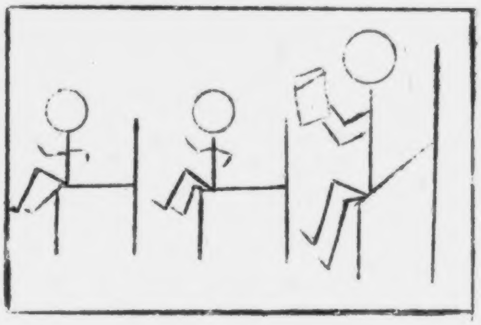
A series of sets of cards, each set consisting of one card depicting children who are happy working in school and another card depicting children who are unhappy because they are not working in school. Happy faces appear on the backs of cards that indicate positive affect and therefore are the correct cards to choose in this game. If the child chooses this kind of card, he gets to keep it until the end of the game. The following is an example of one set of cards with illustrations:

Set one. (A) These children are going to listen to the teacher read them a story. They are happy.

(B) These children do not sit down to listen to the story. They want to play with cards and dolls.

Question: "Which children do you like best?"





The remaining sets of cards are:

Set two. (A) This boy has a box of numbers in front of him. He wants to learn to count. He takes the number four out of the box. He is smiling because he likes to work with numbers.

(B) This boy has a box of numbers in front of him. He wants to sit and look at the box. Question: "Which boy do you want as your friend?"

Set three. (A) This child didn't write his name. He scribbled on the paper.

(B) This child is happy. He has just written his name. He was very careful. Question: "Which child do you want as your friend?"

Set four. (A) This child is watching a filmstrip. He is smiling. He likes the filmstrip. He likes to learn about things on the filmstrip.

(B) This child is knocking blocks off the table. He is not watching the filmstrip. Question: "Which child is your friend?"

Set five. (A) These children are not watching the teacher. They are looking out of the window. (B) The teacher is writing on the board. Some children are watching her. They like to see her write. Question: "Which children are your friends?"

Set six. (A) There are some children who don't like the books. They just sit in their chairs. (B) The children in this class like to read books. They all have a book to read. They like to learn new words. Question: "Which children do you want to be with?"

Set seven. (A) The teacher wants to hang up these pictures. The children are helping her hang them up. They like to help the teacher. (B) These children sit at their desks looking around the room. Question: "Which children are your friends?"

Set eight. (A) The teacher gives children work to do. They are to color in pictures of animals at the zoo. These children are happy. (B) These children are unhappy. They do not want to color the pictures. They put the pictures in their desks. Question: "Which children do you like better?"

Set nine. (A) These children do not like to learn. They do not like to go to school every day. (B) These children love to learn. They like to go to school every day. Question: "Which children do you like better?"

Set ten. (A) The teacher asks the children to help clean the board. These children are happy to help her. (B) These children do not want to clean the board. They sit in the corner and talk. Question: "Which children do you want as your friends?"

Procedure

The instructor and the child alternate on items on this task until the child consistently chooses the child who is working. How many cards need to be modeled for the child is therefore dependent upon how long it takes the child to make the positive affective response.

Modeling positive affect toward children who like school. The instructor takes the first turn with the cards and selects the children who are listening to the teacher read the story. Then the instructor looks at the face on the back, takes the card, and praises herself for choosing friends who like to learn and work in school.

Eliciting positive affect toward children who like school. The child is given a turn to select his friends. The instructor reads the story, asks the child to select his friends, and then shows him whether or not he is right by turning the card over.

Reinforcing positive affect toward children who like school. The instructor reinforces the child for responding correctly by showing him the happy face on the card, by praising him for choosing friends who like to work in school, and by giving him the card. At the end of the lesson, the instructor counts the number of cards the child has and again praises him for choosing so many nice friends who like to work in school.

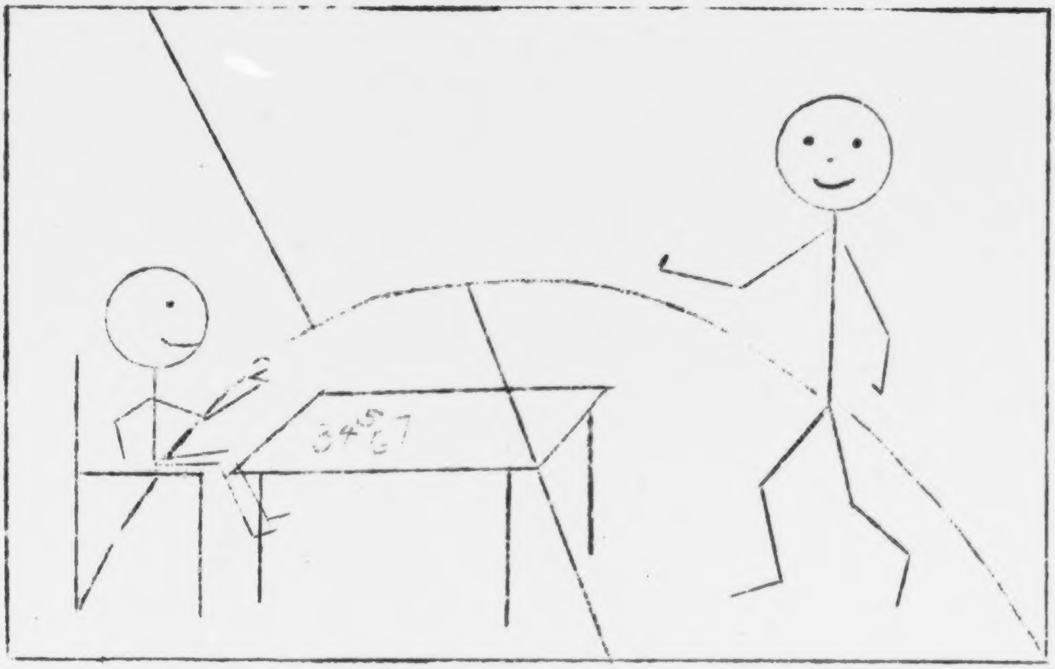
Experience 14: Puzzles

Purpose

The purpose of this experience is to associate positive affect with achieving in learning in school and negative affect with doing nothing in school.

Materials

Nine puzzles on 5" x 8" cards with five of the pictures indicating positive affect toward school and four pictures indicating negative affect toward school. Positive affect is indicated by smiling faces and negative affect by frowning faces. Each puzzle has four pieces. An illustration follows:



The other puzzles indicating positive affect toward achieving in learning in school depict two children writing or two children draw-at a desk; two children reading books, two children going to school; and two children watching the teacher write numbers on the board. Puzzles indicating negative affect toward achieving in learning in school depict three children standing next to a table doing nothing; two children standing next to a table doing nothing; two children not reading books; and two children sitting at a table doing nothing.

Procedure

The instructor takes out one puzzle and shows the child how the four pieces go together to make a picture. Then she explains that after each puzzle has been put together the picture should be described. If the child has worked with puzzles before and knows what to do, the instructor proceeds. If the child needs some practice, she allows him to try to put the puzzle together himself. She mixes the order of the pieces and takes turns with the child putting a puzzle together and describing what is happening in the picture.

Modeling positive or negative affect toward achieving in learning in school. The instructor takes out the first positive-affect puzzle and arranges the pieces on the floor. After moving the pieces together to make a picture, she describes the picture by saying, "This child is happy because he is working with numbers. He likes to work with numbers and to learn things about numbers. His teacher is very happy that he likes to work with numbers, too." The instructor finishes by praising herself for seeing that this child was happy achieving in learning in school.

Eliciting positive or negative affect toward achieving in learning in school. The instructor places the pieces of the child's puzzle on the floor, either in order so that he can easily put them together or mixed up so that he can move them about. If the child has difficulty moving the pieces together when they are in order, the instructor helps him move the pieces into place. After he has the picture put together, she asks the child what his picture is about. If he is reluctant to describe the picture, she points to different aspects of the picture and asks him what they are. She also focuses on the happy or sad faces on the children and asks the child why the faces are happy or sad.

Reinforcing positive or negative affect toward achieving in learning in school. Each time the child responds in a manner that indicates that the children are happy when they learn in school or that they are sad when they do not, the instructor verbally reinforces him. After each puzzle has been completed, she again praises the child for seeing that working in school is fun and not working in school is not fun.

Experience 15: How Do You Feel When ....?

Purpose

The purpose of this experience is to associate feelings of positive affect with school, learning, and achieving.

Materials

The following 10 questions concerning different activities in school (Adkins & Ballif, 1971, p. 12) are used with 8" x 10" photographic illustrations:

How do you feel when ....

1. ... you have a party at school?
2. ... you listen to the teacher read a story?
3. ... you clean up the room?
4. ... you finish drawing?
5. ... you help the teacher?
6. ... you learn something new?
7. ... a friend helps you work?
8. ... you look at books?
9. ... you clean the pet's cage?
10. ... a friend helps you?

Words such as happy, big, excited, smart, tall, strong, and good are elicited from the child for each of the different situations.

Procedure

The instructor tells the child that they are going to look at pictures and try to think of all the words they can to describe how they feel about what is happening in the pictures. The child and the instructor take turns answering each question.

Modeling positive affect toward school, learning, and achieving. The instructor takes the first picture and verbalizes the first question. Then she says, "I feel excited when I know we are going to have a party at school." She models a variety of words, since "happy" and "good" are common words children use to indicate affect. She also praises herself for thinking of a good word to express how she feels.

Eliciting positive affect toward school, learning, and achieving in school. If the child finds it difficult to answer the question and cannot think of any words, the instructor suggests some words. She also encourages the child to think of several words appropriate to express their feelings about a given activity in school, making sure that the child actually uses the words.

Reinforcing positive affect toward school, learning, and achieving in school. The child is praised by the instructor for each word he uses that indicates positive affect toward becoming involved in school, learning, and achieving. At the end, the instructor praises the child for being able to express his feelings and then reads the words again to the child, praising him for each word as she goes along.

Experience 16: Individual Experience

Purpose

The purpose of this experience is to develop positive affective responses toward an activity chosen by the child from his classroom.

Materials

The instructor asks the child to show her some work he has recently done. She also asks him to choose some activity from the classroom on which they could work together.

Procedure

The instructor examines the child's work and verbally describes what he has done. When they begin to work on the activity the child has chosen, she describes it and designates the procedures they might use in working or playing with it.

Modeling positive affect toward selected school activity. The instructor might show the child some work which she has done and of which she is proud. After she shows it to the child, she tells him that she enjoyed working on it and would like to do it again because the accomplishment was enjoyable. When she begins to work on the activity chosen by the child, she verbalizes positive affect towards that activity, towards learning new things related to that activity, and towards doing well at that activity. Finally, she praises herself for having fun working with the child on the activity.

Eliciting positive affect toward a selected school activity. The child is encouraged through questioning to verbalize positive affective responses toward his work. If necessary, the instructor could say: "Did you have fun working on this project?" "Did you have fun learning about this?" and "Are you happy you did a very good job on this?" While the child performs the activity he has selected, the instructor periodically asks the child if he enjoys working with that activity and learning new things about it.

Reinforcing positive affect toward a selected school activity. Each affective response given by the child is verbally reinforced by the instructor. The child is praised for enjoying his work and having fun performing the activity he has chosen. He also is reinforced for any indications of self-reinforcement.